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KANO -NIGERIA**

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**FACULTY OF EDUCATION
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SOCIAL AND ECONOMIC IMPACT OF RELIEF SERVICES ON THE WELL-BEING OF EMERGENCY VICTIMS IN KANO STATE, NIGERIA**By****Abdulhamid Bashir Aminu**

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abashiraminu@yahoo.com; bashirabdulhamid76@gmail.com***Abstract***

This study assessed the social and economic impact of relief services on the well-being of emergency victims in Kano State. The objectives are to examine the relief services provided to different categories of emergency victims; determine the social impact of relief services on the well-being of emergency victims; determine the economic impact of relief services on the well-being of emergency victims, and determine the relationship between social and economic impact of relief services provided by Kano State Emergency Management Agency (KSEMA). The study employed a survey research design with population of 52,661 subjects comprising of 287 staff and 52,374 emergency victims benefitted from the relief services provided by KSEMA in Kano State. The sample of the study was 390 based on the table for determining sample size by Krejcie and Morgan (2006). The sampling procedure used in this study was a purposive sampling procedure. In this study therefore, the researcher deliberately selected and involved 30 Officials of KSEMA and 360 emergency victims who benefitted from the relief services of KSEMA. However, in reaching out to the sampled beneficiaries a snowball technique was used. Two self-developed instruments were used in collection of data. These were a Questionnaire and a Focus Group Discussion (FGD) Guide. While a 4-point Likert Scale type Questionnaire named "Questionnaire for Emergency Victims of KSEMA" (QEVKSEMA) for the emergency victims was used, an FGD was conducted with officials of KSEMA who were involved in the delivery of the relief services. The validity of the instrument was ascertained by experts. And the reliability of the instruments was obtained using the split-half method in which the reliability coefficient level of 0.074 was obtained. Data was analyzed through descriptive and inferential statistics and discussed qualitatively. Findings of the study revealed among others that the relief services provided to the categories of the emergency victims are money, building materials, food items, non-food items, clothing materials, temporary shelters, medical facilities, agricultural facilities; artificial legs/arms, and walking aids, and there is significant relationship between social and economic impact of relief services on the well-being of emergency victims in Kano State. Recommendations made by the study include Government of Kano State should provide adequate security of lives, properties, and insurance of goods and services of emergency victims so as to facilitate their social resettlement in to their families, religious, and cultural activities, and government and non-governmental organizations should mobilize other sources of external assistance/donations for supporting the provision of sufficient monetary donations that will facilitate occupational choices and career development among the emergency victims.

Keywords: *Emergency, Humanitarian, Management, Relief, Social change, and Victims*

Introduction and Background to the Study

Contemporarily, the scope of adult education transcends literacy, women education, and youth empowerment programmes to other aspects of social development that reflects on provision of services meant for the development of humanitarian activities and focusing on the promotion of the general well-being of the people. In Nigeria, prevailing emergencies include fire outbreak, insurgencies, flood, drought, desertification, and other forms of catastrophe requiring immediate responses. On January 21, 2012 Kano State started witnessing Boko-Haram attacks in places like the Police Headquarters in Bompai; Police Zonal Headquarters Kofar Na'isa, and the State Security Services Headquarters at Badawa. This has led to the death of many policemen and innocent people. Subsequently various attacks made on the convoy of the Late Emir of Kano on 19th January, 2013; the Kano Central Mosque on 28th November, 2014, the Farm Centre GSM market, Sabongari and Kantin Kwari markets. Fire out-breaks in places like schools, petrol stations, Dawanau, Kurmi, Kwari, Sabongari, and Farm Centre GSM markets, flooding in Bagwai, Wudil, Minjibir, Kibiya, Bunkure, and Kura Local Government Areas. Most of the emergency victims comprising of women, children, the old, and youths are usually vulnerable to poverty, hunger, frustration, crime, homelessness, unemployment, prostitution, and sometimes lost their lives and properties. At the onset of the disaster, the State Emergency Management Agencies (SEMA), the National Emergency Management Agency (NEMA), civil society organizations such as the Red Cross, along with international development agencies particularly the World Bank and the United Nations working with the Office for the Coordination of Humanitarian Affairs (OCHA) provided emergency humanitarian assistance to the affected population. Some humanitarian responses include immediate evacuation of the affected population away from flooded areas; relocation of the affected population in temporary shelters/ accommodation, provision of food, non-food items (NFIs) such as mats, blankets, and medical assistance to the affected people.

The Federal Government of Nigeria established the National Emergency Management Agency (NEMA) Act No. 12 of 1999 as amended by the Act No.50 of 1999 to manage emergency disasters. This policy therefore led to the establishment of the Kano State Emergency Management Agency (KSEMA) policy targeted on the provision of humanitarian responses of relief services so as to improve the well-being of the emergency victims. This paper therefore is intended to determine the relationship between social and economic impact of relief services on the well-being of emergency victims and draw implication on humanitarian development in Kano State, Nigeria.

The theoretical framework for this study was based on the Learned Helplessness Theory developed by Seligman (1967). The theory posits that animals and people can learn that responding to situation controls rewards and punishment. Human beings and animals are all sensitive to the independence of responding and reinforces and can learn that events are either uncontrollable or controllable. The theory stressed three main effects of uncontrollable trauma which provided for learning in terms of response initiation, retardation of learning and emotional stress.

- i) Response initiation; that is the probability that the subject will initiate responses to escape is lowered because part of the incentive for making such responses is the expectation that they will bring relief;
- ii) Retardation of learning; that is learning that responding and shock are independent and which makes it more difficult to learn that responding does produce relief, and
- iii) Emotional stress; that is learning that trauma is uncontrollable may produce more stress than learning that it is controllable. (Seligman and Maier, 1976).

This means that people affected by emergencies can either make some responses or refrain from making it, and thereby influence the events around them. This implies that nature, however, is not always so permissive in its arrangement of the contingencies. Furthermore, they suggested that such uncontrollable events can be significantly debilitating them producing passivity in the face of trauma, inability to learn that responding is effective and emotional stress and possibly depression. The theory is relevant to the study as it highlights the situation of helplessness that emergency victims face. It also demonstrated the varying patterns of responses to the helplessness conditions including the response in terms of relief support/services. These therefore creates the need for interventional measures, through active relief services provision and which are expected to make them helpful and hopeful, as well as gain resettlement into their various social and economic lives and experience psychological stability. Furthermore, the experiences learned will allow for the emergency victims to have knowledge and skills as regards to disaster preparedness, management, and control.

Relief is an assistance provided to an individual(s) who experienced difficulties that require emergency responses. Relief services are programs which aim at assisting people in distressful situations such as drought, flood, fire outbreak, and so on. Many programs are provided by various institutions so as to help the victims of disasters to deal with their immediate crises or situations in a way that maintains the dignity of the individual and encourages self-reliance amongst them. This assistance through various services may take the form of food; utilities; transport; or pharmaceuticals, and cash to support payment of rent or bills, and sometimes other items such as clothing and household goods. Relief services involves programmes and infrastructure which required additional funding from other sources, such as donations, state/territory and local government funding, specialist service funding, and charitable trust funding (ACOSS, 2003). Relief service therefore entails a variety of supply of goods, services, and programmes which are meant to serve people whom experience various forms of distressful situations. The responses made are regarded as interventional measures to manage the vulnerability of such victims of disasters.

Emergency is an event, actual or imminent, which endangers or threatens to endanger life, property or the environment, and which requires a significant and coordinated response. Intervention to address disasters has evolved through time into a complex policy subsystem, and disaster policy is implemented through a set of functions known as emergency management and response. Modern approaches to emergency management and response involve multidimensional efforts to reduce our vulnerability to hazards; to diminish the impact of disasters; and to prepare for, respond to, and recover from those that occur.

Emergency victim is a person who suffered the effect of occurrence of disaster/event that disturbs his well-being in terms of loss of property, wealth, and psychological stability. Emergencies are unexpected occurrences that tremendously affect the lives of people requiring an immediate response (Godwin and Paul, 2018). Therefore, the concept of emergency victim can be viewed as an individual or group of people who experienced disastrous situations which led to loss of life, property, or general well-being.

Statement of the Problem

Relief services are the immediate humanitarian interventions organized and provided for the purpose of helping emergency victims who were having social problems requiring adjustment in their various communities. Hence, many people lost their lives, some were injured and needs medical assistance, some lost their arms, legs and became crippled, women and

children lost their husbands and became homeless roaming and participating in begging in the streets of Kano.

The KSEMA was backed-up by an amended Act No.50 of 1999 to manage emergency disasters to formulate and implement policies that enhances the well-being of victims in such emergency situations through humanitarian service provision. Goods worth millions of Naira were provided to various categories of emergency victims. The aim of this is to enhance quality of life and improve the well-being of the emergency victims in Kano State. It is in the light of this, that, the researcher conducted a study to determine the relationship between social and economic impact of relief services provided by KSEMA and draw implications for humanitarian development in Kano State, Nigeria.

Research Objectives

The objectives of the study are to:

- i. examine the relief services provided to different categories of emergency victims by Kano State Emergency Management Agency;
- ii. determine the social impact of relief services on the well-being of emergency victims as provided by Kano State Emergency Management Agency;
- iii. determine the economic impact of relief services on the well-being of emergency victims as provided by Kano State Emergency Management Agency, and
- iv. determine the relationship between social and economic impact of relief services provided by KSEMA.

Research Questions

The following research questions guided the study:

- i. What are the relief services provided to different categories of emergency victims by Kano State Emergency Management Agency?
- ii. What are the social impacts of relief services on the well-being of emergency victims as provided by Kano State Emergency Management Agency?
- iii. What are the economic impacts of relief services on the well-being of emergency victims as provided by Kano State Emergency Management Agency?

Research Hypothesis:

The following hypothesis was tested during the study:

H₀₁, there is no significant relationship between social and economic impact of relief services provided by KSEMA

Methodology

This study employed a survey research design with population of 52,661 subjects comprising of 287 staffs and 52,374 emergency victims who benefitted from the relief services provided by SEMA in Kano State. The sample of the study was 390 based on the table for determining sample size by Krejcie and Morgan (2006). The sampling procedure used in this study was a purposive sampling procedure. In this study therefore, the researcher selected and involved 30 Officials of KSEMA and 360 emergency victims who benefitted from the relief services of KSEMA purposefully. However, in reaching out to the sampled beneficiaries a snowball technique was used. Two self-developed instruments were used in the collection of data. These were a Questionnaire and Focus Group Discussion (FGD) Guide. A 4-point Likert Scale type Questionnaire named "Questionnaire for Emergency Victims of KSEMA" (QEVKSEMA) for the emergency victims was used, an FGD was conducted with Officials of KSEMA who were involved in the delivery of the relief services. The validity of the instrument was ascertained by experts in measurement and evaluation, social work, and emergency management. And the reliability of the instruments was obtained using the split-

half method in which the reliability coefficient level of 0.074 was obtained. Data was analyzed through descriptive statistics using the Statistical Package for Social Sciences (SPSS) version 21. While the data collected through the FGD with the staff involved in the delivery of relief services provided to emergency victims by KSEMA was reported verbatim and discussed qualitatively, the data retrieved and processed on the SPSS was presented in descriptive statistics in form of frequency (f) and percentage (%), mean as well as cumulative mean score that indicated a decision from the analysis. However, the decision rule for the acceptance of the statement on items of the questionnaire was obtained by calculating $SA=4, + A=3 + D=2 + SD=1$ which was equal to 10 divided by 4 = 2.5. This means that a cumulative-mean score at or above 2.50 indicated the acceptance of the statement on the items of the questionnaire. As such any cumulative mean score below 2.50 justified statements on the items of the questionnaire were rejected. In addition to this, the null hypothesis was tested using the Pearson Product Moment Correlation (PPMC) statistics and decision at $P \leq 0.05$ level of significance.

Results

Research Question 1: What are the relief services provided to categories of emergency victims by Kano State Emergency Management Agency?

This research question was answered by the sampled emergency victims in simple frequency counts, percentages, mean score, and cumulative mean; where $n=347$.

Table 1: The relief services provided to categories of emergency victims by Kano State Emergency Management Agency

Opinions of emergency victims on relief services	SA		A		D		SD		X
	F	%	F	%	F	%	F	%	
Provision of counselling services	82	23.6	179	51.6	44	12.7	42	12.1	2.8674
Provision of housing	94	27.1	163	47.0	39	11.2	51	14.7	2.8646
Provision of food items	101	29.1	164	47.3	49	14.1	33	9.5	2.9597
Provision of home utensils	68	19.6	122	35.2	105	30.3	52	15.0	2.5937
Provision of clothing materials	70	20.2	183	52.7	55	15.9	39	11.2	2.8184
Provision of building materials	147	42.4	122	35.2	37	10.7	41	11.8	3.0807
Provision of medical facilities	84	24.2	165	47.6	55	15.9	43	12.4	2.8357
Provision of agricultural facilities	161	46.4	88	25.4	51	14.7	47	13.5	3.0461
Provision of capacity building materials	172	49.6	84	24.2	46	13.3	45	13.0	3.1037
Provision of monetary donation	126	36.3	84	24.2	87	25.1	50	14.4	2.8242
Cumulative mean= 2.8994									

Table 1 presents data on the opinion of the sampled emergency victims whom benefitted from the relief services provided by KSEMA in Kano. From this table, it was observed that 51.6% of the respondents agreed with the statement that provision of counselling services was a relief service provided to the categories of emergency victims. This was followed by 23.6% of the respondents whom strongly agreed with the said statement. However, the highest percentage of 47 agreed with the statement that provision housing was a relief service provided to the categories of emergency victims. This was followed by 27.1% of the respondents whom strongly agreed with the said statement. In addition to this were those 47.3% of the respondents whom agreed with the statement that provision of food items were the relief services provided to the categories of emergency victims. 27.1% of the respondents strongly agreed with the said statement. It was also observed from the table that 19.6% of the respondents strongly agreed with the statement that provision of home utensils were the relief services provided to the categories of emergency victims. The highest percentage of 35.2 of the respondents agreed with the said statement. Furthermore, respondents whom strongly

agreed with the statement that provision of clothing materials were the relief services provided to the categories of emergency victims constituted 20.2%. These were complemented with the highest percentage of 52.7 respondents whom agreed with the said statement. From this table also, respondents whom strongly agreed with the statement that provision of building materials were the relief services provided to the categories of emergency victims constituted 42.4%. These were followed by 35.2% of the respondents whom agreed with the said statement. Added to these were 47.6% of the respondents whom agreed with the statement that provision of medical facilities were the relief services provided to the categories of emergency victims. This was followed by 24.2% of the respondents whom strongly agreed with the said statement on provision of medical facilities. Moreover, the highest percentage of 49.6 were those respondents whom strongly agreed with the statement that provision of capacity building materials were the relief services provided to the categories of emergency victims. This was followed by 24.2% of the respondents whom agreed with the said statement. Also 36.3% of the respondents strongly agreed with the statement that that provision of monetary donation were the relief services provided to the categories of emergency victims. It is observed that 24.2% of the respondents agreed with the said statement. These statements on the opinions of emergency victims regarding the relief services provided to the categories of emergency victims were accepted by the respondents. This was justified by a cumulative mean score of 2.8994 higher than the decision rule of 2.5000 in favour of the items in the questionnaire.

Research Question 2: What is the social impact of relief services on the well-being of emergency victims as provided by Kano State Emergency Management Agency?

This research question was answered by the sampled emergency victims who benefitted from the relief services provided by KSEMA in simple frequency counts, percentages, mean score, and cumulative mean, where n=347.

Table 2: The social impact of relief services on the well-being of emergency victims as provided by Kano State Emergency Management Agency

Social impact	SA		A		D		SD		X
	F	%	F	%	F	%	F	%	
Relief services provided by KSEMA ensured access to religious activities	68	19.6	139	40.1	92	26.5	48	13.8	2.6542
Relief services provided by KSEMA allowed for sustenance of important/crucial social engagements such as marriage ceremonies, and festivals, etc	50	14.4	195	56.2	76	21.9	26	7.5	2.7752
Relief services provided by KSEMA ensured full participation in community development activities	65	18.7	197	56.8	55	15.9	30	8.6	2.8559
Relief services provided by KSEMA allowed for Maintenance of family stability	82	23.6	138	39.8	105	30.3	22	6.3	2.8069
Relief services provided by KSEMA encouraged significant cultural activities such as appropriate mode of dressing, visitations, and sharing of goods and services	53	15.3	190	54.8	64	18.4	40	11.5	2.7378
Relief services provided by KSEMA facilitated leisure and recreation activities	50	14.4	133	38.3	118	34.0	46	13.3	2.5389
Relief services provided by KSEMA ensured access to emergency education programmes	48	13.8	146	42.1	55	15.9	98	28.2	2.4150
Relief services provided by KSEMA enhanced access to health services	50	14.4	143	41.2	115	33.1	39	11.2	2.5879
Cumulative mean= 2.67									

From the above table 2, 40.1% of the respondents agreed with the statement that relief services provided by KSEMA ensured access to religious activities. And a sound percentage of 19.6 strongly agreed with the said statement. In addition to this, the highest percentage of 56.2 was constituted by the respondents whom agreed with the statement that relief services provided by KSEMA allowed for sustenance of important/crucial social engagements such as marriage ceremonies, and festivals, etc. this was followed by 14.4% of the respondents whom strongly agreed with the statement. Furthermore, 56.8% of the respondents agreed with the statement that relief services provided by KSEMA ensured full participation in community development activities. These were followed by 18.7% of the respondents whom strongly agreed with the said statement. However, 39.8% of the respondents agreed with the statement that relief services provided by KSEMA allowed for maintenance of family stability. This was followed by 23.6% of the respondents strongly agreed with the statement. Similarly, 54.8% of the respondents agreed with the statement that relief services provided by KSEMA encourage significant cultural activities such as appropriate mode of dressing, visitations, and sharing of goods and services. These were followed by a sound percentage of 15.3 strongly agreed with the statement. Accordingly, 38.3% of the respondents agreed with the statement that relief services provided by KSEMA facilitated leisure and recreational activities, a small percentage of 14.4% strongly agreed with the said statement. Added to these were those 42.1% of the respondents whom agreed with the statement that relief services provided by KSEMA ensured access to emergency education programmes. This was followed by 13.8% of the respondents agreed with the statement that relief services provided by KSEMA ensured access to emergency education programmes. However, 41.2% of the respondents agreed with the statement that relief services provided by KSEMA enhance access to health services. This was followed by a reasonable percentage of 14.4 whom agreed with the statement. These statements were considered accepted by the respondents as justified by the cumulative mean score of 2.67 higher than the decision rule of 2.50 in favour of acceptance of the items in the questionnaire.

Research question 3: What is the economic impact of relief services on the well-being of emergency victims as provided by Kano State Emergency Management Agency?

This research question was answered by the sampled emergency victims who benefitted from the relief services provided by KSEMA in simple frequency counts, percentages, mean score, and cumulative mean, where $n=347$.

Table 3: The economic impact of relief services on the well-being of emergency victims as provided by Kano State Emergency Management Agency

Economic impact	SA		A		D		SD		X
	F	%	F	%	F	%	F	%	
Relief services provided by KSEMA Created access to livelihood activities (occupations)	84	24.2	165	47.6	50	14.4	48	13.8	2.8213
Relief services provided by KSEMA ensured access to income generation activities and maintenance for emergency victims	84	24.2	169	48.7	55	15.9	39	11.2	2.8588
Relief services provided by KSEMA allowed for increased access to financial institutions such as banks, micro-finance, money exchanges for emergency victims	88	25.4	142	40.9	71	20.5	46	13.3	2.7839
Relief services provided by KSEMA Facilitated transportation of goods and properties for emergency victims	56	16.1	113	32.6	110	31.7	68	19.6	2.4524
Relief services provided by KSEMA allowed for mobilization of external monetary donations and support to promote the well-being of emergency victims	65	18.7	148	42.7	66	19.0	68	19.6	2.6052
Relief services provided by KSEMA allowed access for reconstruction of infrastructure that ensured employment and promotes economic stability for emergency victims	64	18.4	153	44.1	60	17.3	70	20.2	2.6081
Relief services provided by KSEMA encouraged access to insurance of goods and infrastructure for emergency victims	51	14.7	114	32.9	116	33.4	66	19.0	2.4323
Relief services provided by KSEMA ensured access to loan programmes from governments financial institutions	57	16.4	127	36.6	112	32.3	51	14.7	2.5476
Cumulative mean = 2.63									

Table 3 shows the economic impact of relief services on the well-being of emergency victims as provided by Kano State Emergency Management Agency. According to the table, the highest percentage of 47.6 agreed with the statement that relief services provided by KSEMA created access to livelihood activities (occupations). These were followed by 24.2% of the respondents whom strongly agreed with the said statement. Added to these were respondents whom also strongly agreed with the statement that relief services provided by KSEMA ensured access to income generation activities and maintenance for emergency victims constituted 24.2%. This was complemented with 48.7% of the respondents whom agreed with the said statement. Similarly, while 40.9% of the respondents agreed with the statement that relief services provided by KSEMA allowed for increased access to financial institutions such as banks, micro-finance, money exchanges for emergency victims, a reasonable percentage of 25.4 of the respondents strongly agreed with the said statement. However, the highest percentage of 32.6 was constituted by the respondents whom agreed with the statement that relief services provided by KSEMA facilitated transportation of goods and properties for emergency victims. This was followed by small percentage of 16.1 whom agreed with the said statement. Moreover, 42.7% of the respondents agreed with the statement that relief

services provided by KSEMA allowed for mobilized external monetary donations and support to promote the well-being of emergency victims. This was followed by sound percentages of 18.7% of the respondents strongly agreed with the statement that relief services provided by KSEMA allowed for mobilized external monetary donations and support to promote the well-being of emergency victims. In addition to this, respondents whom strongly agreed with the statement that relief services provided by KSEMA allowed access for reconstruction of infrastructure to ensure employment and promotes economic stability for emergency victims constituted 18.4%. And the highest percentage of 44.1 agreed with the said statement. Furthermore, 32.9% of the respondents agreed with the statement that relief services provided by KSEMA encouraged access to insurance of goods and infrastructure for emergency for emergency victims. These were followed by a sound percentage of 14.7% whom strongly agreed with the statement that relief services provided by KSEMA encouraged access to insurance of goods and infrastructure for emergency for emergency victims. Added to this were those 36.6% of the respondents whom agreed with the statement that relief services provided by KSEMA encouraged access to loan programmes from government financial institutions. This was followed by 16.4% of the respondents strongly agreed with the said statement. These were justified by the cumulative mean score of 2.63 higher than the decision rule of 2.50 in favour of the acceptance of the statement in the items of the questionnaire.

Hypothesis Testing

Ho1: There is no significant relationship between social and economic impact of relief services provided by KSEMA

Below is the table for Ho1:

Table 4: Social and economic impact relationship

Variable	N	X	r	P	Remark
Social Impact	347	2.67	.679	0.041	SR
Economic Impact	347	2.63			

Table 4 above indicated a positive relationship between social impact and economic impact of relief services provided by KSEMA. Since the probability value is less than 0.05 level of significant. The calculated P- value is 0.041 which is less than the initial P-value of 0.05. This shows that the null hypothesis (Ho1) is rejected. And it indicated that there is significant relationship between the social impact and economic impact of relief services provided by KSEMA.

Findings

From the proceeding data analysis, the following findings were deduced:

- i) The relief services provided to the categories of the emergency victims were money, building materials; food items, non-food items, clothing materials, temporary shelters, medical facilities, agricultural facilities, artificial legs/arms, and walking aids.
- ii) The social impact of relief services on the well-being of emergency victims as provided by KSEMA are having access to religious activities; sustenance of social engagement; full participation in community development activities; maintenance of family stability; significant cultural activities; leisure and recreational activities; ensured access to emergency education programmes, and enhanced access to health services by the emergency victims;

- iii) The economic impact of relief services on the well-being of emergency victims as provided by KSEMA are having access to occupations; access to income generation activities; increased access to financial institutions; facilitated transportation of goods and properties; mobilization of external monetary donations and support; encouraged access to insurance of goods and infrastructure, and ensured access to loan programmes from government financial institutions by the emergency victims, and
- iv) There is significant relationship between social and economic impact of relief services on the well-being of emergency victims in Kano State, Nigeria, the null hypothesis is rejected.

Discussion of findings

The first finding of this study which is the opinions of emergency victims on the relief services provision that were provisions of counselling services; housing; food items; home utensils; clothing materials; building materials; medical facilities; agricultural facilities; capacity building materials, and monetary donation. This finding was similar with the findings discovered during the FGD conducted with the staff of KSEMA. When a discussion was held with the staff involved in the provision of the relief services to emergency victims in Kano State, and having identified the categories of the emergency victims. A question was asked “what are the relief services provided to different categories of emergency victims by Kano State Emergency Management Agency?” It was realized that “*the relief services provided to the categories of the emergency victims were money and building materials for the victims of fire outbreak; food items, non-food items, temporary shelters, and medical facilities for both victims of flood and insurgencies; money, food items, and agricultural facilities for the victims of drought and community conflict; artificial legs/arms, walking aids and medical facilities for the victims of automobile accidents and insurgencies as well, and money and clothing materials for the victims of armed robbery*”. This signified that relief services actively provided by KSEMA were based on what is available rather than what is ought to be available. However, in a study conducted by Enwemeka (2014) entitled the Administration of Emergency Relief Programme in Nigeria: A Case of Flood Incident in Delta State, the study justified the pattern of administration of emergency relief programmes in Delta State create management problems especially in ensuring equitable distribution of relief materials; there are evidence of inadequate facilities to ensure effective administration emergency relief programmes in Delta State and Nigeria in general; the needed manpower and technical know-how in disaster management are not enough to meet up with the challenges in Delta State; the failure and inadequacies of administration of emergency relief programmes in Delta State is partially blamed on the poor funding of the government agencies charged with disaster management in the State; there is evidence of non-enforcement of some environmental management policies in reducing reoccurrence of flood disasters in Delta State; disaster or risk reduction and prevention planning in Nigeria especially in the oil-producing states is still low. This finding relates with the finding of this study on the distribution of the relief materials to the emergency victims not on the basis of their needs and aspirations. Therefore, there is the need for searching for sufficient funding of the programmes designed for managing emergency situations in case of the occurrences of situations that required emergency responses.

The second finding of the study which revealed that the social impact of relief services on the well-being of emergency victims as provided by KSEMA were having access to religious activities; sustenance of social engagement; full participation in community development activities; maintenance of family stability; encouraged significant cultural activities; facilitated leisure and recreational activities; ensured access to emergency education programmes, and enhanced access to health services by the emergency victims. This finding

is in line with the opinions of the staff of KSEMA involved in the provision of relief services to the emergency victims during the FGD. Accordingly, their response thus; the social impact of relief services on the well-being of the emergency victims as provided by KSEMA are *“been able to fully engaged in social activities such as attending religious congregations, festivals, and ceremonies; maintenance of family stability, recreation, dressing and make-up, and participation in community developmental activities by the emergency victims”*. Contrary to these responses were those findings justified in the seventh consecutive report by the Salvation Army in the national Economic and Social Impact Survey (ESIS) 2018. The study is an adjunct to the ESIS 2018 report and is a summary of the main themes and key findings. This provided a deeper understanding of the experiences of hardship, with a particular focus on the cost of living and housing situations for those participants who accessed Doorways Emergency Relief (ER) services in Australia. The findings of the study revealed that a large proportion of respondents who accessed the Salvation Army’s Emergency Relief services experienced financial hardship and disadvantage; homelessness and unemployment; inability to seek support from friends and family in a time of crisis; food insecurity; poor response to parenting responsibilities, and lack of and cost of transportation. The well-being of the beneficiaries of the emergency relief has been impacted negatively.

The third finding of this study which revealed that the economic impact of relief services on the well-being of emergency victims as provided by KSEMA are having access to occupations; access to income generation and maintenance; increased access to financial institutions; facilitated transportation of goods and properties; mobilized external monetary donations and support; allowed access for reconstruction of infrastructure; encouraged access to insurance of goods and infrastructure, and ensured access to loan programmes from government financial institutions by the emergency victims. This finding is in line with the findings from the FGD conducted with the staff of KSEMA whom justified that; *“the economic impact of relief services on the well-being of the emergency victims as provided by KSEMA are creating of occupational opportunities, engage in various occupation, increase in the income level, and having access to financial support among the emergency victims”*. The emergency victims in Kano State whom have benefited from the relief services provided by KSEMA have resettled back in to their communities and engaged in various occupations and realized changes in the levels of their income. These were the results of having enjoyed various financial supports from banks and other external donor agencies whose main targets were to help the emergency victim’s access services meant for supporting occupations and contribute to the GNP and per capita income of the general populace.

The last finding of the study revealed that there is significant relationship between social and economic impact of relief services provided by KSEMA. The null hypothesis was rejected. This implies that a significant relationship exists between the social and economic impact of relief services provided by KSEMA. The finding is in line with the findings reported in the study conducted by Enwemeka (2014) entitled the Administration of Emergency Relief Programme in Nigeria: A Case of Flood Incident in Delta State, the objectives of the study were to examine the relationship between the pattern of administration of emergence relief programme and effective emergency management and administration of relief programmes in Delta State; to ascertain whether administration of emergency relief programmes has really ameliorates the suffering of the flood victims in Delta State; to assess the effects of inadequate government policies on disaster management and poor funding on disaster management agencies in Delta State; and to suggest measures towards reducing occurrence and management of disasters as well as improving the administration of emergency relief programmes in Nigeria. Data used in the study was collected from both primary and

secondary sources in which the primary sources. Findings revealed included the administration of emergency relief programmes in Nigeria particularly in Delta State has suffered a setback following the ineffectiveness of the public/government agencies discharged with disaster management and the pattern of administration of emergency relief programmes in Delta State create management problems especially in ensuring equitable distribution of relief materials. The study recommended among others that government should provide adequate relief materials to flood victims in the flood prone areas in Nigeria and contingency planning which will provide preventive solutions such as construction of drainages and evacuation of flood danger zones to safer places.

Conclusion

Based on the findings of this study it was concluded that relief services rendered to emergency victims can impact not only on their well-being, but also on improving on their human capacities, hence, humanitarian support services can also arise from educational perspectives. Also humanitarian development during crises or disasters comprised of educational support services in form of literacy, vocational, and occupational training.

Recommendations

Based on the conclusions of this study, the following recommendations are made:

- i) KSEMA should set a mobilization committee that will involve staff and stakeholders that will educate members of the public in disaster preparedness and management so as to effectively manage the occurrence of disasters in the State.
- ii) Government of Kano State should provide adequate security of lives, properties, and insurance of goods and services of emergency victims so as to facilitate their social resettlement in to their families, religious, and cultural activities, and
- iii) Government and non-governmental organizations should mobilize other sources of external assistance/donations for supporting the provision of sufficient monetary donations that will facilitate occupational choices and career development among the emergency victims;

REFERENCES

- Abbas, I.I. (2008). Use of Satellite Remote Sensing and Geographic Information System to Monitor Land Degradation along Ondo Coastal Zone (Nigeria). Retrieved on 4/06/2019 from <http://www.balwois.com/balwois/administration/>
- Adebayo, J.A. & Rabee, R. (2011). Flooding and Influence of Urban Planning. *Journal of Urban Design and Planning*. Lagos (Nigeria) (ICE) 164(3):175-187.
- Abosi, C.O. & Ozoji, E.D. (1986). *Educating the Blind*. A Descriptive Approach. Ibadan, Nigeria. Spectrum Books Limited.
- Australian Council of Social Service Inc. (2003). *The emergency relief handbook: A guide for emergency relief workers*, 3rd edn., ACOSS, Strawberry Hills, NSW.
- Emergency Management Victoria, (2014). Psychosocial Support: A Framework for Emergencies. Authorized and published by the Victorian Government, 1 Treasury Place, Melbourne ISBN 978-0-7311 6711-1 (pdf) retrieved on 25/06/2019 from creativecommons.org/licenses/by/3.0/au
- Enwemeka, S. (2014). The Administration of Emergency Relief Programme in Nigeria: A Case of Flood Incident in Delta State. Department of Public Administration and Local Government, Faculty of the Social Sciences, University of Nigeria, Nsukka
- Folorunsho, R. & Awosika, L. (2001). Flood Mitigation in Lagos, Nigeria Through Wise Management of Solid Waste: A case of Ikoyi and Victoria Island, Coastal Region and Small Island Papers 12. Paper presented at the UNESCO-CSI Workshop, Maputo. Retrieved on 29/11/2018 from: <http://www.unesco.org/csi/pub/papers2/mapp6.htm>
- Godwin, E. E. & Paul, O. A. (2018). Managing National Emergency in Nigeria: Prospects and Challenges. *Journal of Good Governance and Sustainable Development in Africa (JGGSDA)*, Vol. 4, No 1, April, 2018. 4(1):68-79, ISSN: 2346-724X (P) ISSN: 2354 158X (E) Available <http://www.rcmss.com/index.php/ijpamr;www.academix.ng>
- Jeb, D.N. & Aggarwal, S.P. (2008). Flood Inundation Hazard Modeling of the River Kad Using Remote Sensing and Geographic Information System. *Journal of Applied Sciences Research* 4 (12): 1822-1833.
- Salvation Army (2018). Feeling the pinch: National Economic and Social Impact Survey. *Australia Social Programme Department*. 95–99 Railway Road, Blackburn VIC 3130. Assessed on 25/06/2019 from salvationarmy.org.au
- Seligman, M. E. P. (1967). Learned Helplessness. Downloaded from www.annualreviews.org Access provided by University of Pennsylvania on 11/26/17.
- Seligman, M. E. P. Maier, S. F. (1976). Learned Helplessness. Theory and Evidence. *Journal of Experimental Psychology: General*, Vol. 105, No. 1, 3-46 University of Colorado University of Pennsylvania.

ADDRESSING ECONOMIC INSTABILITY IN NIGERIA THROUGH EFFECTIVE RECORDS MANAGEMENT FOR GOOD GOVERNANCE**By****Ahmed Abdulkadir Idris (PhD)**

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Abstract

Good governance can only be achieved if there is transparency and accountability; transparency and accountability can only be achieved if there is systemic process for the effective management of records. This qualitative review is an attempt to show a correlation between effective records management and good governance. This position paper is designed to prove that poor records keeping procedures constitute a cause of bad governance in Nigeria. The present study adopted a qualitative research method using content analysis to achieve its objective. The main objective of the study was to bring to the fore through objective analysis how effective records management can reduce the menace of bad governance which has given birth to several societal problems such as kidnapping, banditry, and most importantly, corruption (mismanagement of funds in the public sector). The research highlighted several impediments to effective records management for good governance such as inadequate legal and regulatory framework, inadequate records management skills, insufficient funding among others. This research is designed to proffer solution in the form of strategies for effective records management that will in turn provide platform for delivering good governance to the people of Nigeria. Therefore, the research recommended the immediate development of a records management legal and regulatory framework, developing records management strategies, implementing e-governance, facilitating access to information etc.

Key Words: *Records, Records Management, Economic Stability, Good governance, Nigerian Economy.*

Introduction

Records are information generated by an organization or individual and preserved by them to fulfill a legal duty or conduct business - the case of effective records management and good governance can be likened to that of the egg and the chicken - which begets the other? Is good governance a product of effective records management or the other way round? Both are very important in the achievement of their individual objectives – meaning, you need good governance to be able to set up and implement an effective records management structure just the way you need effective records management to be able to review correspondences, documented policies, procedures and other files that support governance at all levels.

Governance is promoted through consultative meetings which give birth to various minutes of meetings and proceedings. It is through the minutes of meetings that histories of previous agreements are captured, thus forming a basis of decision-making. Planning records management support governance as they offer a layout of what the government intends to do and how (Osebe, Maina, & Kurgat, 2018), who does what and how they should be done. It is no doubt that economic stability is a product of good governance, therefore, since records supports good governance, without doubt, one can also say that good governance begets economic stability. As much as this argument has generated lots of controversies as portrayed by different writers, there is every need to make the situation unambiguous through the provision of clarifications. This is because most African leaders see governance and economic stability as political and records management as merely an administrative and not necessarily a political problem, therefore, at the very heart of their prolonged stay in positions of power.

The aim of this paper is therefore to present new pathway to how effective records management plays an important role in achieving good governance and how good governance in turn reduces the high rate of corruption, insecurity and other social vices that have become a menace to the Nigerian society. To frame these empirical contributions, we first define records management in the context of prior research; secondly, we provide a conceptual understanding of good governance and economic instability within the context of records management. Finally, the review suggests recommendations into how effective records management through concerted efforts will downplay the issues of economic instability bedeviling Nigeria as an entity.

Objective of the Study

The main objective of this study was to explore how effective management of government records can be used to address economic instability in Nigeria. Specifically, it sought to:

- Examine the relationship between records management, good governance and economic stability
- Identify records management challenges to the attainment of good governance for economic stability in Nigeria
- Propose specific records management solutions to specific records management problems in order to facilitate good governance for economic stability.

Methodology

Using the qualitative research approach and specifically content analysis (Creswell 2014), data was collected from secondary sources such as journal articles, theses and conference papers. A literature search was conducted online using related available database and Google Scholar. Search terms included archives and records management, good governance, records management and accountability, records management and corruption, records management and transparency, and, records management and African countries. By content analysis, Bengtsson (2016) says that “no matter what chosen method, the process of analysis reduces the volume of text collected, identifies and groups categories together and seeks some understanding of it”. Several studies in the context of Africa used content analysis successfully in their investigations (Ngoepe & Saurombe 2016; Khumalo, Bhebhe & Mosweu 2017; Rakemane & Jain 2018; Mosweu & Ngoepe 2019). It is in view of the aforementioned that this study adopted content analysis to explore how the effective management of government records can be used to address economic instability in Nigeria.

Concept of Records

A record is defined by ISO 15489 (2015) as “information created, received and maintained as evidence by an organization or person, in pursuance of legal obligations or in the transaction of business”. This definition agrees with that of Duranti (2010), who asserts that a record is a reliable and complete document that is able to convey information, capable of being used in a transaction and of reaching the purposes for which they have been produced. “Records contain information about an evidence of organisational functions, policies, decisions, procedures, operations and other activities” (Yusuf & Chell, 2005). Records serve as the corporate memory of an organisation and provide a mechanism by which organisations can be held accountable for the actions and transactions that they have to execute (NdenjeSichalwe, 2010). Records include all the documents that organisations or individuals create or receive in the course of executing transactions, they are source of evidence, information or artefact. They are sources of evidence when users want proof that a particular activity took place or that it took place in a particular manner (Adamu, 2016), this is so as they provide evidence not only in courts of law but in any situation requiring confirmation that something was done or that it was done correctly.

In addition, while organizations are conducting their day-to-day business activities focused on their goals and objectives, records are generated as a by-product. It is on such records that organizations lay proof of their activities for the purposes of transparency and accountability. Records therefore are information materials regardless of their format with structure, content and context that offers evidence of business transactions and can be relied upon in cases of litigation (World Bank, 2010). Without records, individuals and organizations and government will not be able to perform set functions or achieve set targets. Therefore, records are vital for efficiency in government.

Concept of Records Management

Records management on the other hand becomes inevitable as it is important in preserving the cooperate image of an organization or government as well as providing evidence of how an action was performed. Records management in the context of this study refers to the practice of creating and maintaining records by an organization. Management of records, as an integral part of government processes, is associated with workflow, and is based on administrative and legal necessity. The proper management of records gives competitive advantage because organizations and government agencies can utilise those records to make effective decisions (Chinyemba & Ngulube, 2005). Adamu (2016) in a study of how records are managed in (7) selected federal universities in North West Nigeria considered records management as simply the process by which an organization manages all the elements of records, whether externally or internally generated and in any format or media type, all the way through to their disposal. He also noted that the primary purpose of a records management is to monitor records, regardless of type or format, to ensure that they pass efficiently, and at a minimum cost, through the creation, use, inactive storage and disposal or permanent retention phases.

The benefits of effective records management in government agencies and organizations can be seen in the quality of governance delivered to the governed, the ease at which cases are resolved in courts, the high level of transparency involved in government dealings and most important; effective management of government records in line set standard contribute in improving the confidence level of the people on government and governance in general. To further buttress this assertion, Barrett (2015) observed that “records are an indispensable

element of transparency both within government and externally in the private sector.” Records must be accurate and complete, with appropriate access and effective maintenance.

Concept of Good Governance

The concept of ‘governance’ is not new. It is as old as human civilization. Simply put "governance" can be described as the process of decision-making and the process by which decisions are implemented (or not implemented). Governance can be used in several contexts such as corporate governance, international governance, national governance and local governance. Therefore, an analysis of governance focuses on the formal and informal actors involved in decision-making and implementing the decisions made and the formal and informal structures that have been set in place to arrive at and implement the decision. The World Bank (2010) conceived an idea of governance as "the manner in which power is exercised in the management of a country's economic and social resources for development." The World Bank's definition emphasizes its concern with efficiency and the capacity of state institutions beyond the public sector to the rules and institutions that create a predictable and transparent framework for the conduct of public and private business, as well as accountability for economic and financial performance.

Within the context of records management, the National Archives and Records Administration (2005) defined governance as the set of organizational regulations and standards exercised by management to provide strategic direction, ensuring that objectives are achieved, risks are managed appropriately, and resources are used responsibly. The view presented by NARA goes to further buttress the earlier definition by the World Bank as it brings to the fore, the place of governance in ensuring the sustainability of any given system. Governance therefore must ensure the use of every available resource both human and material in order to provide strategic direction needed for achieving set objectives while reducing the possibility of risk to barest minimum. Today, the term good governance is commonly used by national and international development organizations. However, its meaning and scope are not always clear. While this flexibility enables a contextual application of the term, the lack of conceptual clarity according to UNODC (2019), can be a source of difficulty at the operational level. In some cases, good governance has become a "one-size-fits-all buzzword" lacking specific meaning and content (Johnston, 2002).

‘Good Governance’ as a phrase on the other hand, have been used by different persons in different context at different time to mean different thing, this has led to a definitional deadlock among scholars of knowledge as to what should a generally accepted definition of good governance constitute. In an attempt to understand the phrase, Johnston (2002) defines good governance as "legitimate, accountable, and effective ways of obtaining and using public power and resources in the pursuit of widely accepted social goals". This definition linked good governance with the rule of law, transparency and accountability, and embodies partnerships between state and society, and among citizens. Similarly, Rose-Ackerman (2016) suggests that good governance refers to "all kinds of institutional structures that promote both good substantive outcomes and public legitimacy". Good government is also associated with impartiality (Rothstein and Varraich, 2017), ethical universalism (Mungiu-Pippidi, 2015) and open-access orders (North, Wallis and Weingast, 2009).

Concept of Economic Instability

Economic instability here implies situation where efforts by government through deliberate economic policies towards achieving a stable and sustainable development fails. Economic instability can have a number of negative effects on the overall welfare of people and nations

by creating an environment in which economic asset lose value and investment is hindered or stopped. When economy becomes unstable, there is inflation (decrease in the value of money) which leads to high prices, high unemployment rate, and general angst among consumers and businesses (Economic Instability: Definition & Examples, 2021). Managing records effectively is one of the cornerstones for effective delivery of public services that will in turn bring about economic stability. To this end, Australia, AS8000 (2013) noted that sound records management delivers transparency by documenting and providing evidence of an activity, a decision or an agreement.

Transparency and accountability as vital element of good governance (Sabina, 2003; Moseu and Rakemane, 2020), hence constitute key ingredients for achieving economic stability in any country. For citizens to hold governments accountable for their actions, they must have access to records to monitor government activities (De Mingo & Cerrillo-i-Martínez 2018). Without records, the public cannot play their watchdog role. In Nigeria, media reports indicated the missing of huge amount of money as swallowed. In Nigerian, due to poor records management practices to support in tracking the nefarious activities of some of its officials, a sales clerk was suspended after she told auditors that a snake swallowed a whopping sum of 36M Naira (\$100,000 or £72,250) from the Joint Admission and Matriculations Examinations (JAMB) office (BBC News, 2018). In a related report, the Guardian (2019) reported that the sum of 6.90M Naira was reported by the management of Kano zoo to have been eaten by a Gorilla. In addition, Vanguard stated that “the BBC Pidgin reported on Friday that Freedom Radio, a Kano-based radio station claimed that a finance officer it spoke to said “a huge Gorilla” sneaked into their office to “swallow” the money”.

Many researches have supported the view that indeed developing countries are facing serious challenges as a result of their poor culture of records management, governance and economic instability (Mnjama and Wamukoya, 2004, Kenosi, 2013, Adamu 2016, Idris 2016). Mnjama (2002) opines that records and information play a critical role in fighting corruption: they protect citizen’s rights in ensuring transparency, accountability and governance and hence sustainable economic development. Therefore, corrective measures must be taken by government such as reorganisation of records systems to make them reliable and accessible, thus promoting accountability and transparency Moseu and Rakemane, 2020). Records management facilitates the proper conduct of public administration (Klareld 2015). It is thus apparent that access to records is needed to guarantee transparency in public administration (De Mingo & Cerrillo-i-Martínez 2018). Else, the resultant or spill-over effect of this sort of situation will bring about economic instability, the type of which the peak of it is uncertainty and crisis which can lead can lead to economic recession, or in extreme cases, societal collapse.

Records Management and Good Governance

The importance of records management in good governance cannot be over emphasized. This is because government and the general activities that make up governance directly thrive on effective records keeping activities. Goodman (2004) argues that all elements for effective development, namely, governance, effective and accountable financial systems, fair judicial system and enforceable civil rights, are dependent upon an effective records management infrastructure. Without a proper records management infrastructure, institutions will not have the ability to use the experience of the past for guidance.

The above stand wasn’t so different from that of Chibambo (2003) who observed that, with effective records management, it goes a long way to document the decisions and activities of

governments and private institutions and serve as a standard through which future activities and decisions are measured. Without records, there can be neither rule of law nor accountability. Without good records, officials are forced to take decisions on an ad hoc basis without the benefit of an institutional memory. Fraud cannot be proven, meaningful audits cannot be carried out and government actions are not open to review. These reasons best describes why Popoola (2007) stated that in providing services to its citizens, a government needs records be it in hospital, schools, and even environmental protection monitoring records. Without adequate records, the effectiveness of development projects will suffer. Properly managed records ensure that government officers base their decisions on accurately captured information.

Giving a keynote speech in an archives and records management conference in Botswana, Professor Patrick Ngulube of the University of South Africa appealed to countries to use records to foster good governance through partnerships to build Africa (Shone 2019). For example, several years of bad governance in Sierra Leone led to the deterioration in public sector management due to the collapse of records-keeping systems leading to corruption (Moore 2004). Corrective measures by the government included the reorganization of records systems to make them reliable and accessible, thus promoting accountability and transparency. Records management facilitates the proper conduct of public administration (Klareld 2015). It is thus apparent that access to records is needed to guarantee transparency in public administration (De Mingo & Cerrillo-i-Martínez 2018).

Individuals working at different levels must comprehend what good governance comprises to better grasp and appreciate that record management affects good governance. Human and non-human resources are leveraged into the management process to attain corporate goals (Mokhtar & Yusof, 2016). Records keeping can be defined as one of the non-human organizational resources that, if properly maintained, will contribute to the growth, development and achievement of good governance. Ngoepe (2008) asserts that inadequacy of sound records management practices in government institutions is a hindrance to governance. It may not be practical to ensure proper and fair country planning without consulting records. Good sustainable governance always begins with better records management practices that guard against corruption, mismanagement of finances and bribery. Adequately available recorded information is the basis that government departments make informed decisions.

To achieve good governance, the basic goal of a records management program, according to Mokhtar and Yusof (2016) is to monitor records, regardless of kind or format, to guarantee that they transit efficiently and at a low cost through production, use, inactive storage, disposal, or permanent retention phases. Furthermore, Mokhtar and Yusof also believe that records management may be viewed as a valuable asset in the same way that cash, personnel, and tangible assets like land and buildings can. Both primary and secondary functions enhance accountability and reduce risks by assisting in the decision-making process. As a result, the records management idea can be incorporated into the overall business management strategy. Many archivists and records management specialists have endorsed this notion.

Records Management Challenges for Good Governance and Economic Stability

There are several impediments in the form challenges to the implementation of records management in Nigeria. These impediments are:

a. Inadequate Legal and Regulatory Framework:

The presence of a regulatory framework in the form of legislation or policy is important in the effective management of records. According to the National Archives of UK

(2010), a records management policy is the foundation of effective records management in an organization and is normally the guiding document for the development and implementation of a records management programme. It promotes proper filing of records and their retrieval; control movement of records and records retention and scheduling to supports good governance. A policy determines the types of records to be created, how they will be created and what becomes of those records after they are created. The Inadequacy of legal regulatory framework however, is a major impediment to the effective management of records in Nigeria. Iwhiwhu (2005), Adamu ((2016), Idris (2016) in different studies report that inadequacy and a near total absence of a regulatory framework constitute a major challenge to records management. Records management obtains within a framework of laws (Okello-Obura 2011). An understanding of such laws enables a comprehension of the legal context in which records can and should be created and managed. Furthermore, governments use legislation to ensure that its records and archives are appropriately managed and preserved over time for accountability and historical reasons (Mosweu and Rakemane, 2020).

b. Inadequate Records Management Skills:

Training is an important component of modern management. Records personnel at all levels require appropriate training to enable them acquire new knowledge and skills (Dikopoulou & Mihiotis 2010). Archives and records management professionals require basic ICT-related skills and competencies such as digital curation, digital preservation, audio-visual and digital archiving, and digitization (Garaba 2015). The need for skills and technical knowhow in the management of records is inevitable especially as so many records are now generated in electronic format. There is the need to train staff and records managers on the technicalities involved with the handling and management of electronic records. While lamenting on the nature and manner in which records are handled in organizations and agencies of government, Otuoma (2010) observe that most civil servants do not have appropriate education in records and information management that allows them to do their best in managing records. Notably, as far back as 1966 in a meeting in Washington DC, USA, the International Council on Archives (ICA) advocated for localized solutions to records-keeping problems through education and training (Katu 2013). Although African countries have since established archives schools that offer archival education from certificate to post-graduate level (Katu 2015; InterPARES 2018), there is still the need to create more awareness on the dangers of poor records handling among the Nigerians.

c. Insufficient funding:

Insufficient funding remains a crippling problem in most records offices, more so in government-run ones, many struggle to meet overhead running costs and thus records managers often sideline ICT-related needs in preference for those that are seen to have a more direct bearing on the organization. The cost of making new purchases and maintenance of old equipment is another drawback for most organizations already struggling to stay within budget allocations. Few would have staff with technical know-how required for the maintenance and repair of equipment. Thus organizations that are unable to outsource technical manpower often have a number of their equipment either stored away awaiting repair or not functioning properly (Oladele, 2001; Selinger, 2001; Tunca, 2002).

d. Inadequate Records Management Programs:

Situation in several government agencies explains the poor management of records in Africa and Nigeria in particular. This has been revealed by studies conducted in several African countries such as Botswana, Namibia, Kenya, Swaziland, South Africa, Nigeria and Tanzania (Tshotlo & Mnjama 2010; Nasieku, Kemoni & Otiike 2011; Ndenje-

Sichalwe 2011; Maseko 2012; Nengomasha & Nyanga 2012; Ngoepe 2012, Idris, 2016; Adamu 2016). Consequences of poorly managed records include missing files, poor records storage and lack of qualified staff to manage records. Records management is accorded a low status and is thus not a priority (Abioye 2007). In Botswana, public service records management suffers the same fate in that other functions such as human resources management and financial management are recognized more, as shown by staffing levels whereby the ceiling for records management positions is much lower than for other functions. According to Musembi (2005), the poor maintenance of public records in Kenya, like in many developing countries, has directly undermined any efforts to achieve good governance.

e. Lack of Political Will:

The lack of political commitment was highlighted by Luyomba (2010) as a factor affecting the Electronic Records Management policy framework and it was argued that the need to improve the management of records at all level of government was not yet appreciated by the politicians. This affected the necessary resource allocation to initiate a Records Management programme. He further argued that most politicians continue to view records as a by-the-way and hence do not support projects to improve the RM function, which in turn affects the institutions of government and their ability to establish and maintain Records Management projects. Without political will, resources required to implement Records Management project will not be realized. High level advocacy will be necessary to persuade politicians of the benefits of effective Electronic Records Management to Government of Nigeria services in order to encourage them to give higher priority to funding for records management programme in order to achieve good governance for economic stability.

Proposed Records Management Requirements for Achieving Good Governance and Economic Stability

Addressing impediments to economic instability in government borders on improving records management practices within the organizations and agencies in Nigeria and below are proposed solutions to achieving such objective:

a. Developing a Legal and Regulatory Framework for Records Management:

The first step is to develop and pass into the law, a records management legal and regulatory framework. Adamu (2016) observed that the near absence of a general regulatory framework for the management of records in all format emanating from government owned institutions of learning constitute an impediment to effective records management. Archival legislation in Nigeria was first enacted in 1957 and reviewed in 1992 to make provision for the preservation and management of all categories of records; public, private, individual and business (Abioye, 2007). However, changes in records management trends as a result of ICT have created an environment where records are no longer in paper format but electronic, hence, the needs to have in place framework that accommodate such.

b. Development of Records Management Strategies

Records management strategies are usually developed based on the ideals as enshrined in the other available records management standards. An example is the ISO 15489-1, the UKNA standard, the NOARK standard, the Australian National standard, the Malaysian standard and a host of others. Keakopa (2013) stated that a records management strategy provides direction for records and information management throughout an organization. Mosweu & Rakemane (2020) pointed out that such strategy should address the legal, policy and regulatory framework, an appropriate organizational structure, awareness

raising, capacity building and proper records storage. A records management strategy should be fully supported by government and its senior officials in order to encourage general and wide acceptability by others. Government involvement in putting in place a strategy is also important as it requires huge financial investment for it to work (Mosweu & Rakemane, 2020).

c. Establishing and Implementing an e-system of Governance:

The establishment and subsequent implementation of ICT in public service will immensely contribute to effective records keeping and good governance. There is a link between RM and e-governance as the implementation and sustenance of e-governance systems are predicated upon efficient, pervasive and affordable information access and service principles. Many studies showed that e-government services are derived from using ICTs and some of the reasons and goals for e-governance as stated by them were to improve service delivery through use of ICTs (Roper & Millar, 1999; Forlano, 2004; Garson, 2004; Basu, 2004).

d. Building Records Management Capacity Through Training

The need keep personnel abreast with the currents trends and development within the field of records management is very important and should be taken with utmost seriousness. Records personnel at all levels according to Dikopoulou & Mihiotis (2010) require appropriate training to enable them to acquire new knowledge and skills. These trainings as noted by Mosweu & Rakemane (2020) must include both formal and informal approaches such as on-the-job training. The skills gotten from the trainings are needed for them function effectively within their offices and places of operations.

Facilitating Access to Information

As important as it is for government to achieve its objectives of good governance and economic stability; so it is important for them to ensure the continuous access to the records they create on a daily basis through its effective management. Facilitating access to information through the FOI legislation would strengthen good governance that is sure to facilitate economic stability. Snell and Sebina (2007) argue that “the way institutions and society manage the access to, and protection of, information is a critical catalyst in the creation of good governance and deliberative democracy. FOI legislation is regarded as a springboard for enabling citizens to have access to information that will ensure good governance.”

Concluding Thoughts

Conclusively, it has been observed that records have a great influence on the way the government of Nigeria executes its services. Properly managed records provide a basis for equity in resource distributions, hence fostering confidence among the public, which results into good will from the people on government projects, hence smooth governance. Through proper records of statistics, the county is able to ensure proper planning for the future of its subjects in terms of creation of employment, food security, provision of education, provision of health services, improving infrastructure and provision of water. It is also no doubt to state that that there exists a close relationship between governance and record keeping. Well-managed records are tools for governance; they facilitate the achievements of transparency and accountability in public administration. Poorly managed records directly undermine any effort to achieve governance and hence economic instability. The significance of effective records management is that governance cannot be realized in an environment where records are poorly managed. Poorly managed records are a recipe for delayed decisions or at times poorly informed decisions. It is therefore important for records of and about governance to be well managed for informed decision, transparency and accountability that will be bring about economic stability

REFERENCES

- Abioye, A. (2007). Fifty years of archives administration in Nigeria: lessons for the future. *Records Management Journal* 17(1): 53-56.
- Adamu, H. (2016) Management of Electronic Records in Universities in North Western states of Nigeria. Being a thesis presented to the Department of Library and Information Sciences, Bayero University, Kano in Partial Fulfillment for the award of Master of Library and Information Science.
- Adamu, H. (2019) Training Needs and Competencies Required for the Management of Electronic Records in Nigerian Universities: *Bayero Journal of Library and Information Science*, Vol. 2 (1)
- Barata, K. & Cain, P. (2001). Information, not technology, is essential to accountability: electronic records and public-sector financial management. *The Information Society* 17(4): 247-258.
- BBC News, (2018, February, 12) Nigerian snake ate millions of naira, clerk says. bbc.com/news/world-africa-43030827.
- Bengtsson, M. (2016). How to plan and perform a qualitative study using content analysis. *Nursing Plus Open* 2: 8-14.
- Chibambo, M. L. N. (2003), "Records management: the key to good governance and sustainable development", XVII B in Eastern and Southern Africa Regional of Branch of the International Council on Archives, (ESARBICA) General Conference on Archives, Society and Good Governance Mozambique, Maputo, 22-26 July.
- Creswell, (2014). *Research design: qualitative, quantitative, and mixed methods approaches*. Los Angeles: Sage Publications.
- De Mingo, A. C. & Cerrillo-i-Martínez, A. (2018). Improving records management to promotetransparency and prevent corruption. *International Journal of Information Management* 38(1): 256-261.
- Deloitte, Touche, Tohmatsu. (2004). CIO 2.0: The changing role of the chief information officer. Retrieved July 5, 2005, from <http://www.deloitte.com/dtt/cda/doc/content/cio2sp.pdf>
- Dikopoulou, A. & Mihiotis, A. (2010). Records management: a key element for effectiveness, accountability and development in the Greek Public Administration. *International Journal of Public Administration* 33(5): 262-287.
- Dikopoulou, A. & Mihiotis, A. (2012). The contribution of records management to good governance. *Total Quality Management Journal* 24(2): 123-141.
- Duranti, L. (2010), "The odyssey of records management", ARMA Quarterly, Vol. 23 No. 3, pp. 3-11. July, 3-11 and no. 4, October.

- Forlano L. (2004). 'The Emergence of Digital Government: International Perspectives', in A. Pavlichev and G. D. Garson (eds.), *Digital Government: Principles and Best Practices*. Hershey, PA: Idea Group Publishing, p.35
- Garson G. D. (2004). 'The Promise of Digital Government', in A. Pavlichev and G. D. Garson (eds.), *Digital Government: Principles and Best Practices*, Hershey, PA: Idea Group Publishing, p.2
- Goodman, S.K. (2004), "Records continuum model in context and its implication for archival practice", *Journal of the Society of Archivists*, Vol. 22 No. 1.
- Guardian, (2019, June 17) *Kano zoo millions stolen, not swallowed by gorilla – Official*.
<https://guardian.ng/news/kano-zoo-millions-stolen-not-swallowed-by-gorilla-official/>
- Idris, A. A. (2013): *Management Of Electronic Records in Financial Institutions*. Been a PhD proposal presented to the department of library and information science, Bayero University, Kano (Unpublished)
- International Organization for Standardization (2015), "ISO 15489-1: 2015 information and documentation – records management. Part 1: general", ISO, Geneva, section 3.16.
- InterPARES Trust. (2018). AF01 curriculum alignments at institutions of higher learning in Africa:preparing professionals to manage records created in networked environments. Available at:<https://interparestrust.org/assets/public/dissemination/AF01LitReviewJuly2018.pdf> (Accessed 21 March 2020).
- Iwhiwhu, G. B. (2005) Management of Records in Nigerian Universities: Problems and prospects. *The Electronic Library* 23 (3): 345-355 (2005)
- Johnston, M. (2002). *Good Governance: Rule of Law, Transparency, and Accountability*.
<http://etico.iiep.unesco.org/en/resource/good-governance-rule-law-transparency-and-accountability>
- Katuu, S. (2013) An overview of archives and records management education and training in Africa. Paper presented at the 3rd Asia and Pacific Conference on Archival Education - Innovation and Engagement in Archival Education, Renmin University in Beijing, China. Available at:
https://www.researchgate.net/publication/330672620_An_overview_of_Archives_and_Records_management_education_and_training_in_Africa
- Katuu, S. (2015) The development of archives and records management education and training in Africa – challenges and opportunities. *Archives and Manuscripts* 43(2): 1-24.
- Khumalo, N. B., Bhebhe, S. & Mosweu, O. (2016). A comparative study of freedom of information legislation in Botswana, South Africa and Zimbabwe. *Mousaion* 34(4): 108-131.

- Klareld, A. S. (2015). Adapting official archives management to the context of e-government. Available at: <https://www.diva-portal.org/smash/get/diva2:812544/FULLTEXT01.pdf>
- Luyombya, D. (2010): *Framework for Effective Public Digital Records Management in Uganda*. Thesis submitted in fulfilment of the requirements for the award of the degree of Doctor of Philosophy Department of Information Studies University College London
- Maseko, A. (2012). The management of audio-visual records at the Swaziland Television Authority. Masters dissertation, University of Botswana, Gaborone.
- McLeod, J. and Childs, S. (2007), "Records management capacity and compliance tool kits", *Records Management Journal*, Vol. 17 No. 3, pp. 216-232
- Mnjama, N. (2002), "National archives and the challenges of managing the entire life-cycle of records", *South African Archives Journal*, Vol. 38, pp. 24-32.
- Mnjama, N. and Wamukoya, J. (2004). *E-government and e-records management*. A paper presented at the SADC Workshop on E-government, Gaborone, Botswana, 14-16 April 2004.
- Mokhtar and Yusof (2016) *Electronic records management in the Malaysian public sector: The existence of policy*. Available from: https://www.researchgate.net/publication/235323082_Electronic_records_management_in_the_Malaysian_public_sector_The_existence_of_policy
- Moore, A. (2004). A. Sierra Leone records management: what's on? *ACARM Newsletter* 35. Available: <http://www.acarm.org/documents/issue35/35.12%20Sierra%20Leone%20Records%20Management.pdf>
- Mosweu, O. & Ngoepe, M. (2018). *Legal framework for auditing public sector accounting records in the digital environment in Botswana. Proceedings of the 9th ProLISSA Conference*. Cambridge Scholars Publishing: Newcastle
- Mosweu, O. & Rakemane D. (2020). The role of records management in ensuring good governance in Africa: impediments and solutions. *Journal Of Sasa*. Vol(53)
- Mungiu-Pippidi, A. (2015). Corruption: Good Governance powers innovation. *Nature*, vol. 518, issue 7539 (February), pp. 295-297.
- Musembi, M. (2005). Efficient record management as a basis of good governance. Available at: http://africa.peacelink.org/wajibu/articles/art_9633.html
- Nasieku, A, Kemoni, H and Otike, J. (2011). Management of electronic records at Moi University, Eldoret, Kenya. *ESARBICA Journal* 30: 177-210
- National Archives and Records Administration (2005). <http://www.archives.gov> (Accessed 28 October 2011)

- Ndenje-Sichalwe, E. (2011). The role of records management in the implementation of public service reform programme in Tanzania. Paper read at the XXI Bi-Annual East and Southern Africa Regional Branch of the International Council on Archives (ESARBICA) General Conference on "Access to Information: Archives and Records in Support of Public Sector Reform in Context", Maputo (Mozambique), 6-10 June 2011.
- Nengomasha, C.T. & Nyanga, E. H. (2012). Managing semi-current records: a case for records centres for the public service of Namibia. *Journal for Studies in Humanities and Social Sciences* 1(2): 231-245
- Ngoepe, M. & Saurombe, S. (2016). Provisions for managing and preserving records created in networked environments in the archival legislative frameworks of selected member states of the Southern African Development Community. *Archives and Manuscripts* 44:1, 24- 41
- Ngoepe, M.S. (2008), "Accountability, transparency and good governance: the national archives and records service of South Africa's role in helping government to better service delivery to the South Africans: Conference paper", available at: www.liasa.org.za (accessed 11 November 2016).
- North, D, John W, & Barry, W. (2009). *Violence and Social Orders: A Conceptual Framework for Interpreting Recorded Human History*. New York: Cambridge University Press.
- Okello-Obura, C. (2011). Records and Archives Legal and Policy Frameworks in Uganda. Available at: <https://digitalcommons.unl.edu/cgi/viewcontent.cgi?article=1640&context=libphilprac>.
- Osebe, Maina, & Kurgat, (2018) "Records management practice in support of governance in the county governments of Kenya, a case of Nyamira County" *Records Management Journal*, Vol. 28 (3), pp.293-304, retrieved from <https://doi.org/10.1108/RMJ-06-2018-0017>
- Otuoma, P.S. (2010), Problems faced in archives and records management in Kenya. Available: <http://informationscienceblog.blogspot.com/2010/06/problems-faced-in-archives-andrecords.html>
- Popoola, S.O. (2007), "The status of records management in the state universities in Nigeria", in Babalola, J.B., Adedeji, S.O. (Eds), *Contemporary Issues in Educational Management*, The Department of Education Management, University of Ibadan, Ibadan
- Rakemane, D. & Jain, P. (2018) Revitalization strategies for libraries, archives, and other information centers. *Library and Information Association of Zambia Journal* 3(1&2): 41-51.

- Roper, M. & Miller, M. (1999) *Managing Public Sector Records: A Study Programme, building Records Appraisal System*. International Records Management Trust (IRMT)
- Rothstein, B. & Varrach A. (2017). *Making Sense of Corruption*. New York: Cambridge University Press.
- Sebina, P. (2003) *Freedom of information, records management and good governance. Any symbolic relationship?* Available at: http://goodgovernance.bappenas.go.id/publikasi_CD/cd_penerapan/ref_cd_penerapan/do_wnload/unfolder/FOI%20Good%20Governance.PDF
- Shone, I. (2019) Records management extolled as tool of good governance. Available at: <http://www.botswanaguardian.co.bw/news/item/3987-records-management-extolled-astool-of-good-governance.html>
- Tale, S. and Alefaio, O. (2005): Records Management in Developing Countries: Challenges and Threats – Towards a Realistic Plan. *ACARM Newsletter*, Issue 37
- Tshotlo, K. & Mnjama N. 2010. Records management audit: the case of Gaborone City Council. *ESARBICA Journal* 29: 5-34
- Tunca, B. (2002): Barriers in using Technology: *World Conference on Educational Multimedia, Hypermedia and Telecommunications*, (1), 1980 - 1982
- UNODC (2019) *What is Good Governance?* <https://www.unodc.org/e4j/en/anti-corruption/module-2/key-issues/what-is-good-governance.html>
- Wamukoya, J. (2007), “Fostering trust and accountability through records management: a paper presented at the ICA/ISO workshop held at the United Nations”, Nairobi, and October.
- World Bank (2010), “Managing records for effective service delivery and public accountability in development: an introduction to the core principles for staff of the World Bank and its partners”, IRMT, London, available at: <http://web.worldbank.org/> (accessed September 2015).

CAPACITY BUILDING NEEDS OF AUTOMOTIVE MECHATRONICS INSTRUCTORS IN MAINTENANCE OF BRAKING AND IGNITION SYSTEMS IN VOCATIONAL ENTERPRISE INSTITUTIONS IN NIGERIA

By

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Abstract

The study was designed to identify the Capacity Building Needs of Automotive Mechatronics Instructors in Vocational Enterprise Institution in Nigeria, two research questions and two null hypotheses guided the study. A descriptive research design was used for the study. The study was carried out in Vocational Enterprise Institutions in FCT, Abuja and Kogi State, Nigeria. A proportional stratified random sampling technique was used to drawn 10% of automotive industrial technicians for the study. The population for the study was 115 respondents which comprises of 77 automotive industrial technicians and 38 automotive mechatronics instructors. Automotive Mechatronics Instructors Capacity Building Needs Questionnaire (AMICBNQ) developed by the researchers and validated by three experts was used for the data collected for the study. The reliability coefficient of the instrument was 0.88 through Cronbach Alpha statistics. Statistical Package for Social Science (SPSS Version 23) was used for the data analysis, weighted mean, standard deviation and improvement needed index (INI) were used for answering research questions. While z-test statistics was used to test the null hypotheses formulated for the study at .05 level of significance. The findings of the study revealed among others that automotive mechatronics instructors need capacity building in all the identified area of competencies. Based on the findings, it was recommended that: Workshop and seminars should be organized for automotive mechatronics instructors in order to build their capacity in braking and ignition systems. National Directorate of Employment (NDE) as one of the government agency charge with the responsibility of training motor vehicle mechanics should organize capacity building training from time to time and regular seminars and conferences for automotive mechatronics instructors in Vocational Enterprise Institution in Abuja and Kogi State and indeed automotive mechatronics instructors in other parts of Nigeria.

Keywords: Vocational Enterprise Institutions, Capacity Building, Automotive Mechatronics Instructors, Braking and Ignition Systems.

Introduction

Vocational Enterprise Institutions (VEIs) are institutions approved as part of the ongoing reform of the technical and vocational education sector. They are institutions which offer competency based-skills in vocational, technical or professional education and training at post-basic and post-secondary levels to equip the youths as well as working adults with vocational skills and knowledge to meet the increasing demand for skilled man-power in the various sectors of the nation's economy (NBTE 2007). Further, part of the objective of VEIs according to National Board for Technical Education (NBTE 2009) is to widen access to vocational education and offer credible alternative to higher education. Federal Republic of Nigeria FRN (2014) stated that, VEIs is aimed at providing appropriate skills and certification to pursue a chosen trade or career, such as fashion design, agriculture, office secretarial, carpentry and joinery, computer studies, fabrication and welding, block laying and concreting, printing technology, electrical installation and wire repair works, motor vehicle mechanics and automotive mechatronics.

Automotive mechatronics is one of the vocational trades offered in vocational enterprise institution in Nigeria which is aimed at producing competent vehicle mechanics with sound practical skills, knowledge and ability to diagnose and carryout repairs and/or maintenance on all types of modern vehicles equipped with electronics and computer systems. According to Abubakar, Yahaya and Tijani (2015) Automotive mechatronics is the synergic application of physics, namely, mechanics, fluidics (hydraulics or pneumatics), electric, electronic, overall control theory, computer science, and sensor and actuator technology to design improved automotive products and manufacturing. While, the process of developing competencies and capabilities in individuals, groups, organization is referred to as capacity building.

Capacity building is the process of developing competencies and capabilities in individuals, groups, organization sectors or countries which leads to sustainable and self-generating performance improvement in specific area or aspect of human development. Akbar (2013) defines capacity building as a process of developing and strengthening the skills, instincts, abilities, processes and resources that individuals, organizations and communities need to survive, adapt and thrive in the fast-changing world. It focuses on understanding the obstacles that inhibit people, institution, government, international organizations and non-governmental organization from realizing their developmental goals while enhancing the abilities that will allow them to achieve measurable and sustainable results. In automotive mechatronics the fundamental goal of capacity building is to enhance the ability of instructors based on perceived needs.

Capacity building needs are set of activities that expand the scale, reach, efficiency or effectiveness of an individual, organization or programme. These activities may expand services, enhance delivery of services, or generate additional resources for the individual or organization. The Canadian International Development Agency (CIDA) (2013) viewed capacity building needs as the activities, approaches, strategies, and methodologies which help organizations, groups and individuals to improve their performance, generate development benefits and achieve their objectives. Therefore, capacity building needs in the context of this study refers to strengthening the skills, competences and abilities that automotive mechatronic instructors should possessed so that they can produce competent automotive mechatronics craftsmen. Since automobile industries advance every day, automotive mechatronics instructors need consistent capacity building so as to keep in pace

with the technological advancement in the industry. Moreover, adequate knowledge and skills cannot be transfer to the trainee without an instructor.

An instructor is one who influences another to change his attitude and behavior on the basis of new knowledge, values, habit and practical skills. On the other hand, an automotive mechatronic instructor is one whose role extends from the development of intellectual activities and cognition to the development of practical skills in modern vehicles, (psychomotor), emotions, attitudes and morals (affective) (Adamu, 2015). The foregoing clearly revealed that an automotive mechatronic instructor should be familiar with the current technological changes in automotive industry, be computer literate, and plan the learning activities and experiences with the view of current global changes and practices in the technological world. However, one of the major challenges of automotive mechatronics instructors is the changes in the present-day modern vehicle systems; these changes according to Jimoh (2017) have affected automotive instructors in the areas of understanding, interpreting and maintenance of modern vehicles.

Maintenance involves taking specific approved steps and precautions to care for a piece of equipment, machinery or facility and ensure it attains its maximum shelf life. Maintenance is defined as actions necessary for retaining or restoring a piece of equipment, machine, or system to the specified operable condition to achieve its maximum useful life (Olaitan, Alaribe, & Ellah 2009). This signifies that the automotive mechatronic instructors need to know how to carry out maintenance on modern vehicle. Maintenance in the context of this study is a set of organized activities that should be carried out in order to prolong the service life of a vehicle and keep its best operational condition with minimum cost acquired. Parts of these modern vehicle system and sub systems equipped with mechatronics in the words of Malone (2016) include: Braking system and Ignition system. The vehicle system which serves to either reduces the speed of the vehicle or brought it to rest when the need arises is the braking system.

The braking system converts the mechanical energy possessed by the vehicle into heat energy by the means of friction in order to slow down the vehicle or completely stop the vehicle safely when the need arises. Giri (2013) revealed that the operation performed in braking system is the reverse of that carried out in accelerating. In the latter the heat energy of the fuel is converted into the kinetic energy of the vehicle, is converted into heat. Accordingly, the vehicle system responsible for providing spark necessary to ignite the mixture of air/fuel inside the engine cylinder is the ignition system.

The ignition system supplies a suitable spark inside the engine cylinder under all varying condition of engine operation. The spark ignites the compressed air/fuel mixture in the combustion chamber; each spark is timed to appear at the plug gap just as the piston approaches top dead centre on the compression stroke (Giri, 2013). The main component of the conventional ignition system includes; ignition coil, distribution, centrifugal advance mechanism, spark plug, switch and condenser. Gscheidle (2016) argued that most engines produced today are distributor less and rely on sensor and electronic component to perform this task.

Automobile industrial technicians in the context of this study refers to the highly skilled individual or group of individuals whose major works are to maintain vehicle functional condition by listening to operator complains, conditioning inspection, repairing engine failures, repairing mechanical and electrical system malfunctions, replacing parts and

components as well as body damage. Even though automotive instructors are involved directly in imparting practical skills aspects of modern vehicle to the trainees, they can only do so in the aspect that they can perform through the skills they possessed.

The foregoing clearly revealed that modern automobiles are blend of 20th and 21st century technology. The designs of modern vehicles have advanced to a very sophisticated level. Unlike the old mechanical operated vehicle systems, the modern vehicles are being operated and controlled by computerized electrical sensors. Indeed, almost every other function within the engine is controlled by an onboard computer. However, Hamidu (2019) pointed out that the use of electronic circuit and advents of computers have changed the operating systems in modern vehicles. Many stakeholders involved in ensuring effective integration of modern technologies in the education system, instructors have a particular important role to play. Carlson and Gadio (2012) opined that instructors are the key to whether technology is used appropriately and effectively. Appropriate use of modern technologies can catalyze the paradigm shift from instructors-centered pedagogy to a more effective learner-centered pedagogy; Capacity building of instructors can play a major role in enabling this shift. This study is therefore design to identify the capacity building needs of automotive mechatronics instructor in vocational enterprise institutions in Abuja and Kogi state.

Statement of the Problem

The responsibility of Automotive Mechatronics Instructors in Vocational Enterprise Institutions s (VEIs) in Nigeria is to facilitate learning in theoretical, practical aspect of automotive mechatronics courses and evaluate the trainees for effectiveness of training and individual growth. In addition, they should be able to conduct practical demonstration of automotive mechatronics in the workshop through the capacity building. These will enable graduates of VEIs to function effectively as a craftsmen and women in automotive establishments, carryout necessary general tests procedures, standard diagnosis and faults rectification in modern vehicles (FRN, 2014). Automotive mechatronics instructors are expected to be able to demonstrate the use of different sophisticated diagnostic equipment for fault detection and rectification in various modern vehicles brands, observe relevant safety in automotive Mechatronics Engineering practice, interpret wiring diagrams, fault codes, as well as technical reference materials (NBTE, 2009).

However, it has been observed that graduates of automotive mechatronic from VEIs who are expected to, upon completion of their training programme have acquired practical skills that will enable them to secure paid employment or set up their own workshop and become self-employed and employ others could not do so because of the limited competencies possessed by them (Hamidu, 2019). Although literatures attributed these low competencies possessed by these trainees upon graduation to low capacity building of automotive mechatronic instructors. Jimoh (2017) attributed the low capacity building in those instructors to recent advancement in automotive industry. Although these might not be unconnected with the fact that these instructors do not have up to date technical know-how and seems to lack capacity building in automotive mechatronic systems such as braking system, ignition system, transmission system, fuel supply system and suspension system. From the forgoing, this study therefore seeks to determine the capacity building needs of automotive mechatronics instructors in Vocational Enterprise Institutions in Abuja and Kogi state.

Objectives of the Study

The aim of this study was to identify the capacity building needs of automotive mechatronics instructor in vocational enterprise institutions in Abuja and Kogi state; specifically, the study sought to achieve the following objectives:

1. Determine the capacity building need of automotive mechatronics instructors in the maintenance of braking system
2. Identify the capacity building needs of automotive mechatronics instructors in maintenance of ignition system

Research Questions

The following research questions were answered in the study

1. What are the capacity building needs of automotive mechatronics instructors in maintenance of braking system?
2. What are the capacity building needs of automotive mechatronics instructors in maintenance of ignition system?

Hypotheses

The following null hypotheses guided the study and were tested at 0.05 level of significant

HO₁: There is no significant difference in the responses of the automotive industrial technicians and automotive mechatronics instructors as regard the capacity building needs of automotive mechatronics instructors in maintenance of braking system.

HO₂: There is no significant difference in the responses of the automotive industrial technicians and automotive mechatronics instructors as regard the capacity building needs of automotive mechatronics instructors in maintenance of instructors in maintenance of ignition system.

Methodology

A descriptive research design was employed for the study. The study was carried out in FCT, Abuja and Kogi State, Nigeria. A proportional stratified random sampling technique was used to drawn 10% of automotive industrial technicians for the study. Therefore, the sample population for the study was 115 respondents comprises of 77 automotive industrial technicians and 38 automotive mechatronics instructors was used as the total population for the study. A structured questionnaire titled: Automotive Mechatronics Instructors Capacity Building Needs in Braking and Ignition System Questionnaire (AMICBNBIQ) developed by the researchers and validated by three experts was used for the data collected for the study. The questionnaire items were assigned four points rating scale of: Highly Needed (HN)/ Highly Performed (HP) (4), Needed (ND)/ Performed (PD) (3), Moderately Needed (MN) Moderately Performed (MP) (2), and Not Needed (NN) / Not Performed (NP) (1) The reliability coefficient of the instrument was 0.88 through Cronbach Alpha statistics: Statistical Package for Social Science (SPSS Version 23) was used for the data analysis. 115 copies of questionnaire were distributed to respondents; 106 copies were duly filled by the respondents and returned representing 91.2%. Weighted Mean and standard deviation improvement needed index were the statistical tools for answering research questions while z-test statistics was used to analyze the null hypotheses formulated for the study.

Therefore, decisions for research questions were based on the resulting mean scores interpreted relative to the concept of real lower and upper limits of numbers; that is: 3.50 – 4.00 = Highly Needed, 2.50 – 3.49 = Needed, 1.50 – 2.49 = Moderately Needed and 0.50 –

1.49 = Not Needed. Furthermore, the following steps were used to determine the capacity building needs of automotive mechatronics instructors: The weighted mean of each item under the needed category coded X_n was calculated; The weighted mean of each item under the performance category coded X_p was calculated; The performance gap (PG) was determined by finding the difference between X_n and X_p that is $X_n - X_p = PG$; And Where the PG is positive (+ve) it means capacity building is needed because the rate at which instructors performed is lower than expected. Where PG is negative (-ve), it means capacity building is not needed because the rate at which instructors performed is greater than the needed. And where PG is zero (0) capacity building is not needed because the rate at which instructors performed is equal to what is needed (Agboh, 2011). The decisions on the null hypotheses formulated for the study were based on comparing the significant value with ($P < .05$) level of significant; that is where the significant value is less than ($P < .05$) it was rejected, while equal or greater than ($P < .05$) level of significant the hypothesis was upheld and accepted.

Result

Research Question 1

What are the capacity building needs of automotive mechatronics instructors in the maintenance of braking system?

Table 1

Performance Gap Analysis of the Mean Responses of Respondents on the Capacity Building Needs of Automotive Mechatronics Instructors in Maintenance of Braking System

		N=115			
S/No	Items	Mean (X_n)	Mean (X_p)	PG	
(X _n - X _p)					
1.	Perform visual inspection of wheel speed sensor and cables	3.87	3.32	0.55	CBN
2	Identify defective wheel speed sensor	3.51	3.02	0.49	CBN
3	Check wheel speed sensor and the pulse ring	3.88	3.37	0.51	CBN
4.	Carry out speed sensor signal testing	3.91	3.27	0.64	CBN
5.	Check power supply of the wheel speed sensor	3.79	3.07	0.72	CBN
6.	Service the wheel speed sensor	3.80	3.65	0.15	CBN
7.	Visually inspect the wheel speed sensor pulsers for chipped or damaged teeth	3.88	3.37	0.51	CBN
8.	Remove wheel speed sensors	3.91	3.71	0.20	CBN
9	Replace electrical wiring to the wheel speed sensor	3.78	3.01	0.77	CBN
10.	Perform a test drive to check the wheel speed sensor after replacement	4.31	2.89	1.42	CBN
11.	Carryout visual inspection of the wiring and the mechanical components	4.04	2.45	1.59	CBN
12.	Recognize a defective Anti-lock Braking System (ABS) warning light	4.04	2.85	1.19	CBN
13.	Repair braking system for functionality	3.83	2.81	1.02	CBN
14	Test braking system after repair	3.75	2.89	0.86	CBN

15.	Carry out all kinds of mechanical tests on the braking system	4.14	2.92	1.22	CBN
16.	Check the operation of the braking system, adjust and repair according to the manufactures specification	3.55	3.45	0.10	CBN
17.	Replace faulty or bad braking system with new one	3.65	3.15	0.50	CBN
18.	Select appropriate tools and equipment for the maintenance of automotive braking system	3.90	3.65	0.25	CBN
19.	Service automatic braking system correctly	2.97	2.47	0.50	CBN
20.	Recalibrate the speed sensors	4.50	3.80	0.70	CBN
21.	Use oscilloscope to verify the voltage and signal supply to the braking system	3.65	2.50	1.15	CBN
	Grand Mean/PG	4.04	3.23	0.74	CBN

Keys: X_n = weighted mean for needed category, X_p = weighted mean for performance category, performance gap (PG) = $X_n - X_p$, CBN = Capacity Building Needed, CBNN = Capacity Building Not Needed

Table 1 shows the mean responses of the respondents on the twenty one (21) items posed to determine the capacity building needs of automotive mechatronics instructors in the maintenance of braking system with the grand performance gap value of 0.74. This implies that automotive mechatronics instructor's needs capacity building in all the areas of competences in the maintenance of braking system.

Research Question 2

What are the capacity building needs of automotive mechatronics instructors in maintenance of Ignition system?

Table 2
Performance Gap Analysis of the Mean Responses of Respondents on the Capacity Building Needs of Automotive Mechatronics Instructors in Maintenance of Ignition System

		N=115			
S/No	Items	Mean (X_n)	Mean (X_p)	PG	
		($X_n - X_p$)			
1.	Conduct engine performance test using engine analyzer and determine needed repair	3.61	3.20	0.41	CBN
2.	Test run the ignition system using the multimeter	4.31	3.15	1.16	CBN
3.	Check the crankshaft (CKP) and camshaft (CMP) sensors and their wiring for damage	4.15	2.66	1.49	CBN
4.	Record ignition timing using digital multimeter	3.51	2.91	0.60	CBN
5.	Carry out throttle cable inspection and adjustment	4.18	2.50	1.68	CBN
6.	Check the crank sensor using diagnostic tool	3.97	2.85	1.12	CBN
7.	Perform magnetic sensor testing	4.00	3.82	0.18	CBN
8.	Inspect faulty crank position sensor	3.83	3.23	0.60	CBN
9.	Test and diagnose defective reductor sensor	3.65	3.80	0.15	CBN

10.	Use plug wire to check for spark of the plug	3.75	3.60	0.15	CBN
11.	Conduct a careful visual inspection of the wiring and the mechanical components	3.45	3.27	0.17	CBN
12.	Check the battery to make sure there is ample voltage to start the engine	3.32	3.00	0.32	CBN
13.	Inspect, repair and replace faulty electronic ignition components	3.57	2.60	0.97	CBN
14	Use engine analyzer to conduct engine performance test	3.42	2.52	0.90	CBN
15	Use diagnostic tool to check ignition problem	3.56	3.35	0.21	CBN
16	Interpret ignition diagnostics trouble codes	3.78	2.49	1.29	CBN
17	Inspect faulty electronic ignition components	4.06	3.27	0.79	CBN
18	Repair faulty electronic ignition components	3.87	3.07	0.80	CBN
19	Replace faulty electronic ignition components	4.30	2.85	1.45	CBN
20	Inspect, faulty computerized ignition components	4.18	2.50	1.68	CBN
21	Repair faulty computerized ignition components	3.76	3.27	0.49	CBN
22	Replace faulty computerized ignition components	3.74	2.49	1.25	CBN
23	Inspect faulty transistorized ignition components	3.84	3.27	0.57	CBN
24	Repair faulty transistorized ignition components	4.30	3.07	1.23	CBN
25	Replace faulty transistorized ignition components	3.75	2.85	0.90	CBN
	Grand Mean/PG	3.83	3.02	0.82	CBN

Keys: X_n = weighted mean for needed category, X_p = weighted mean for performance category, performance gap (PG) = $X_n - X_p$, CBN = Capacity Building Needed, CBNN = Capacity Building Not Needed

Table 2 shows the mean responses of the respondents on the twenty five (25) items posed to determine the capacity building needs of automotive mechatronics instructors in the maintenance of ignition system with the grand performance gap value of 0.82. This implies that automotive mechatronics instructors in Vocational Enterprise Institutions in Abuja and Kogi state, needs capacity building in all the areas of competences in the maintenance of ignition system.

Testing of Hypotheses

Hypothesis 1

There is no significant difference in the mean responses of the automotive industrial technicians and automotive mechatronics instructors on the capacity building needs of automotive mechatronics instructors in maintenance of braking system.

Data for testing hypothesis one are presented in table 3.

Table 3

The z-test Analysis of the Mean Responses of automotive industrial technicians and automotive mechatronics instructors on the capacity building needs of automotive mechatronics instructors in maintenance of braking system

Motor vehicle mechanics	N	Mean	S.D	df	P – value	Alpha level	Decision
Automotive industrial technicians	77	4.04	0.77	114	0.60	0.05	Upheld
Automotive mechatronics instructors	38	3.23	0.65				

Key: df = degree of freedom, p- value = probability value calculated by the computer, S.D = Standard deviation

The analysis of the results presented in table 3 revealed that p-value 0.60 is greater than 0.05 this implies that there is no significant difference in the mean responses of both groups of respondents. Therefore, the null hypothesis of no significant difference between the mean responses of automotive industrial technicians and automotive mechatronics instructors on the capacity building needs of automotive mechatronics instructors in maintenance of braking system was upheld.

Hypothesis 2

There is no significant difference in the responses of the automotive industrial technicians and automotive mechatronics instructors on the capacity building needs of automotive mechatronics instructors in maintenance of ignition system.

Data for testing hypothesis two are presented in table 4.

Table 4

The z-test Analysis of the Mean Responses of automotive industrial technicians and automotive mechatronics instructors on the capacity building needs of automotive mechatronics instructors in maintenance of ignition system

Motor vehicle mechanics	N	Mean	S.D	df	P – value	Alpha level	Decision
Automotive industrial technicians	77	3.82	0.77	114	0.96	0.05	Upheld
Automotive mechatronics instructors	38	3.02	0.65				

Key: df = degree of freedom, p- value = probability value calculated by the computer, S.D = Standard deviation

The analysis of the results presented in table 4 revealed that p-value 0.96 is greater than 0.05 this implies that there is no significant difference in the mean responses of both groups of respondents. Therefore, the null hypothesis of no significant difference between the mean responses of automotive industrial technicians and automotive mechatronics instructors on the capacity building needs of automotive mechatronics instructors in maintenance of ignition system was upheld.

Findings/Discussion

The findings in Table 1 relating to research question 1 showed that automotive mechatronics instructors in Vocational Enterprise Institutions in Abuja and Kogi State, Nigeria needs capacity building in all twenty one areas of competencies in the maintenance of braking system. The findings revealed that automotive mechatronics instructor's needs capacity building in recognizing a defective Anti-lock Braking System (ABS) warning light. This is line with the view of Erjavec (2010) who pointed out that ABS scan tools and testers can often be used to monitor and trigger input and output signals in the ABS. This will allow technicians to confirm the presence of a suspected problem with an input, switch, or output solenoid in the system. Buttressing this finding, Bosch (2013) opined that 76 percent of all new vehicles were equipped with Anti-locking Braking System and it has become standard equipment for passenger vehicle in the European Union (EU), United States of America (USA) and Japan. Affirming this assertion Ofria, (2015) reported that anti-lock braking system originally developed for aircraft braking system is now been applied in modern motor vehicles.

The findings in Table 2 relating to research question 2 showed that automotive mechatronics instructors in Vocational Enterprise Institutions in Abuja and Kogi State, Nigeria needs capacity building in all twenty-five areas of competencies in the maintenance of ignition system. The findings revealed that automotive mechatronics instructors needs capacity building in replacing faulty electronic ignition components, The finding is in line with the assertion of Melior (2015) who held that the designs of vehicles have advanced to a very sophisticated level, and unlike the old mechanically operated vehicle systems, the modern vehicles are being operated and controlled by computerized electronic sensors. For example, latest vehicles' ignition systems are electronically controlled without employing the old use of manually reset contact breaker. This finding agreed with the findings of Julian (2015) which asserted that, an ignition system is needed on gasoline engines to ignite the air-fuel mixture. It produces an extremely high voltage surge, which operates the spark plugs. A very hot electric arc jumps across the tip of each spark plug at the correct time. This causes the air-fuel mixture to burn, expand, and produce power.

The findings further revealed that automotive mechatronics instructors needs capacity building in using wire to check for spark of the plug. This finding is in consonant with the views of Melior (2015) which pointed out that, ignition system have several ignition coils, one for each spark plug or pair spark plugs, when a coil is activated by the electronic control module, high voltage is sent through a spark plug unit. Buttressing this, Bonnick (2016) revealed that without a good quality spark, in the right place at the right time the engine performance will be affected as well as the operation of emission control system.

Conclusion

This study was designed mainly to determined capacity building needs of automotive mechatronics instructors in Vocational Enterprise Institution Abuja and Kogi State, Nigeria. The findings of the study serve as the basis for making the following conclusion: that automotive mechatronics instructors needs capacity building in all the area competences in the maintenance of braking system such as perform visual inspection of wheel speed sensor and cable, check power supply of the wheel sensor, replace electrical wiring to the wheel speed sensor. It was also concluded that automotive mechatronics instructors needs capacity building in all the area competences in the maintenance of ignition system such as inspect, adjust or replace faulty crank position sensor, test and diagnose defective reluctor sensor, use plug wire to check for spark of the plug, conduct a careful visual inspection of the wiring and

the mechanical components, check the battery to make sure there is ample voltage to start the engine.

Recommendations

1. Workshop and seminars should be organized by National Automotive Council of Nigeria for automotive mechatronics instructors in order to build their capacity in braking, ignition, transmission, fuel supply and suspension system.
2. National Directorate of Employment (NDE) as one of the government agency charge with the responsibility of training in Nigeria should organize capacity building training from time to time and regular seminars and conferences for automotive mechatronics instructors in Vocational Enterprise Institution in Abuja and Kogi State and indeed automotive mechatronics instructors in other parts of Nigeria.

REFERENCES

- Abubakar, H. Yahaya, U. O. & Tijani, A. (2015). Autotronic Course – An Innovative approach in modern automotive technology Education in Africa for sustainable development. *International Journal of Scientific & Engineering Research*, 6(1), 27 - 29.
- Adamu M. K. (2015). Capacity Building Needs of Automobile technology lecturers in Colleges of Education (Technical) in North – east Nigeria. *Unpublished S(M.Ed. industrial education) thesis*, Department of Vocational Teacher Education, University of Nigeria, Nsukka.
- Agboh, C.I. (2011) Capacity Building Needs of Business Studies Teachers for Effective Teaching in Junior Secondary Schools in Enugu State. *The Nigerian Journal of Research and Production*, 19(1), 200-211
- Akbar, K. F. (2013). The Role of Universities in Science and Technology Capacity Building for Sustainable Development. *Quarterly Science Vision*, 8 (3&4), 70-72.
- Bonnick A.W. (2016) *A Practical Approach to Motor Vehicle Engineering and Maintenance*: Washington, DC: Routledge printing press.
- Bosch, R. (2013). *Diagnostics using obd11 data bus communication networks*. Suffolk: Professional Engineering Publishing Limited.
- Canadian International Development Agency (2013). *Capacity building*. Retrieved from https://en.wikipedia.org/wiki/Capacity_building_on_20/02/2021
- Carlson, S. & C.T. Gadio.(2012). Teacher Professional Development in the use of Technology. In W.D. Haddad and A. Draxler (Eds), *Technologies for education: Potentials, parameters, and prospects*. Paris and Washington, DC: UNESCO and the Academy for Educational Development
- Erjavec, J. (2010). *Automotive technology: A system approach*. USA: Cengage Learning Inc.
- Federal Government of Nigeria (2014). National policy on education, Lagos: Nigerian research and development council press.
- Giri, N. K. (2013). *Automobile technology* (6th Ed) New York: Khanna Publishers.
- Gscheidle, R. (2016). *Modern automotive technology-fundamentals, service, diagnostics*. Germany: Verlag europa- lehrmittel publishers.
- Jimoh, J.A. (2017). Auto mechanic skills needed by technical college students for self-employment. *Unpublished (B.Sc. industrial education) thesis*, Department of Vocational Teacher Education, University of Nigeria, Nsukka.
- Julian, H.S. (2015). *An introduction to modern vehicle design*: Jordan hill, Oxford: Heineman.
- Li, W. (2010). ABS control on modern vehicle equipped with regenerative braking. a master of science thesis in systems and control, delft university of technology, Faculty of Mechanical, Maritime and Materials (3ME), Delft University of Technology.

- Malone, R. (2016). Wisconsin natural resources magazine, auto log. Retrieved from <http://www.wnrmag.com/excite/AT-wnrqery.htm> on 14/09/2020.
- Melior, I. (2005). *Introduction to engine performance – study guide*. Retrived from <http://www.wnrmag.com/excite/AT-wnrqery.htm> on 14/02/2021.
- Hamidu, Y. M. (2019) Emerging technology competencies needed by motor vehicle mechanics for establishing automobile enterprises in Federal Capital Territory in Federal Capital Abuja, Nigeria. *Unpublished M.Tech. thesis*. Federal University of Technology, Minna, Nigeria.
- National Board for Technical Education (2007). *National technical certificate and advanced national technical certificate curriculum and module specifications in automotive mechatronics*. Kaduna: NBTE Press.
- National Board for Technical Education (2009). *Curriculum for vocational enterprise institutions colleges*. Kaduna: NBTE Press.
- Ofria, C. (2015) Typical automotive braking system. Retrieved on 12th April, 2020 from <http://www.carparts.com/brakes.htm>
- Olaitan, S.O., Alaribe, M.O., & Ellah, B.I. (2009). Capacity Building Needs of Palm Oil and Kernel Marketers for Enhancing Economics Returns From Oil Palm Industry in South Eastern Nigeria. *Journal of the Nigerian Vocational Association*, 13(1), 143-148.

THE INFLUENCE OF CALL ON THE WRITING ATTITUDES AND ACHIEVEMENTS OF SAUDI EFL STUDENTS

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Abstract

This study aimed to investigate the impact of Computer Assisted Language Learning (CALL) on the writing attitudes and achievements of Saudi EFL learners. The sample for the study was drawn from the EFL learners at a technical institute in Saudi Arabia. The study used embedded-experimental mixed methods research design in which a qualitative data set provided an auxiliary role in a primarily quantitative study. Nested sampling technique was used to select the participants. Then they were divided into two groups: the experimental, which used a CALL software in their composition classes, and control, which used traditional methods. It was hypothesized that the experimental group participants would have more favorable writing attitudes than those in the control group and that there would be a strong positive relationship between writing attitudes and achievement in a writing test. After establishing that the two groups were somewhat homogeneous in their writing attitudes and writing skills prior to the treatment, post-test results showed the experimental group participants having a statistically significantly higher mean score on the post-treatment writing attitudes survey than the control group, $t(72) = 2.029$, $p = .046$. There was also a very strong positive correlation between post-treatment writing attitudes and post-test achievement in the writing test, $r(72) = .921$, $p < .001$. The study recommended that educators and policy makers integrate CALL due to its immense pedagogical benefits and that teachers should understand how to form, nurture and exploit positive attitudes to improve performance/achievement.

Keywords: *Computer Assisted Language Learning (CALL), English as Foreign Language (EFL) learners/students, paper-based/traditional writing, writing attitude, writing performance/achievement,*

Introduction

This study investigates the influence of Computer Assisted Language Learning (henceforth CALL) on the writing attitudes and achievement of some Saudi English as a Foreign Language (henceforth, EFL) learners. Specifically, it examines how the using a CALL application (MS Word) in a composition class improves learners' attitudes and enhances their achievement in a writing performance test.

Writing in Second/Foreign Language Contexts

The term 'writing' has been defined in different ways by different scholars. Abu Ghararah and Hamzah (1998) defined it as "the logical organization and arrangement of sentences within a paragraph and paragraphs within units of discourse ... and the expression of ideas" (p. 87). Oz (2006) considered it as the written expression of thoughts, desires, emotions and schemes.

Learning a second (L2) or foreign language (FL) gives one the opportunity to communicate with other people both in spoken and written forms. According to Raimes (1983), writing is

an integral part of participating fully in an L2 or FL cultural milieu, as it is one of the ways by which we can communicate with a person who is not right there in front of us.

Being one of the four language skills, writing has always been part of the syllabus in teaching English. It enables learners to express themselves in a non-verbal way and use language in an advanced way. Raimes (1983) believed that it reinforces the grammatical structures, idioms and vocabulary that students have been taught, gives them the opportunity to be adventurous with the language to go beyond what they have just learned to say and take risks and become very involved with the new language.

Unlike the other language skills, writing requires a lot from learners. Hedge (2000) said that the process of writing involves setting goals, generating ideas, organizing information, selecting appropriate language, making a draft, reviewing it and then revising it. In addition, since most formal assessments are conducted in written form, writing often becomes the sole determiner of success and failure in many educational contexts. For this and many other reasons, language learners (non-natives and natives alike) are under intense pressure to master this complex and demanding skill. Cumming (2013) is of the view that the multi-faceted complexity of writing is more exacerbated when writing in a second or foreign language because ESL/EFL writers have to write in a language that is not their mother tongue and the writing conventions of the target language may differ considerably from those of their first languages.

Writing is, therefore, a really challenging activity, which many teachers tend to neglect and many students tend to do quite reluctantly due to their negative attitudes towards it. They tend to lose interest in writing because of the overwhelming challenges associated with it. In fact, many researchers, such as AbuSeileek (2006), Ackerman (2006), Alsamadani (2010), AlShalan (2012), Graham, Harris and Herbert (2011), Jahin (2012), Jahin and Idrees (2012) and Latif (2007) have argued that writing is not only challenging, but is also the most difficult of all the language skills. Tzotzou and Tourabelis (2015) said that “writing skill remains one of the most difficult areas which the majority of EFL learners seem to regard as the least enjoyable of the four skills as well as the way that it has been neglected or treated poorly up till now in the school courseware” (p. 1). For this, many EFL learners at colleges and universities in Saudi Arabia, and indeed elsewhere, struggle to achieve a satisfactory level in English language writing.

Although several researchers, such as Al Khateeb (2014), AlSamadani (2010), Huwari and Al-Khasawneh (2013) and Sharadgah (2013) have addressed the writing difficulties and challenges faced by Saudi EFL learners and suggested several measures to remedy them, including the use of various forms of CALL applications, Shukri (2014) still believed that the problems of writing among Saudi EFL learners have not been exhaustively discussed. Hence the need for this study.

The Role of Attitudes in Language Learning

Learning is generally seen as a process of understanding something new which may lead to a change in an individual's emotional, behavioral, and cognitive domains. Therefore, to be successful, a learner needs to exploit both his intellectual and affective faculties. This means affective variables, such as attitudes, orientations, motivations and anxiety significantly influence learning (Abidin, Pour-Mohammadi & Alzwari, 2012; Soleimani & Hanafi, 2013). For Abidin et al., language learning should mainly be approached as a “social and psychological phenomena rather than a purely academic one” (p. 121). Out of the affective

variables which influence learning, attitude is often considered the most predominant. As a matter of fact, Gardner and Lambert (1972) concluded that “the ability of the students to master a second language is not influenced by the mental competence or language skills, but also by the students’ attitudes and perceptions towards the target language” (p. 121).

Due to the influence of affective factors in foreign or second language learning situations, students who possess a positive disposition about a language have the tendency to increase more positive attitudes towards learning it. Conversely, negative attitudes serve as a barrier against successful L2/EFL learning and lead to anger, frustration and dislike (Victori & Lockhart, 1995). In simple terms, this means the less the level of writing anxiety, the higher the positive writing attitude. Correspondingly, the higher the writing attitude, the more likely learners are to succeed in English language learning. Researchers who established the value of attitudes in language learning include Dörnyei (2005), Ellis (2000), Fakeye (2010) and Soleimani and Hanafi (2013).

A number of studies has found a correlation between positive attitude towards language learning and high achievement in it. For example, in their study on Iranian medical students' attitudes towards English language learning, Soleimani and Hanafi (2013) found that among the different factors contributing to foreign language learning, affective variables (especially attitudes) are of paramount importance. The participants ($n = 40$) were required to answer a 30-item questionnaire concerning attitudes towards English language learning in terms of behavioral, cognitive, and emotional aspects. The results showed that the overall mean score of English language attitude among the participants was 65.4 (out of 100, $SD = 5.6$). The independent samples t -test carried out to explore the differences in the participants’ attitude towards English language learning revealed that Iranian medical students overall held highly positive attitudes regarding English language learning. This finding reaffirms that of Erkan and Saban (2011), who submitted that “it is reasonable to speculate that success with writing in a foreign language may be related to attitudes towards writing, apprehension about writing, and self-efficacy in writing” (p. 167).

Attitude towards English as a Foreign Language Writing

Writing attitude is defined by Sturm and Rankin-Erickson (2002) as “the feelings and beliefs students have about their writing ability and about written language tasks” (p. 128). For Graham, Berninger and Fan (2007), it is “an affective disposition involving how the act of writing makes the author feel, ranging from happy to unhappy” (p. 516). Research has revealed how writing attitude greatly influences students’ writing behavior. Favorable writing attitudes are highly likely to lead to higher achievement in writing tasks, and vice versa. In fact, Petric (2002) noted that there are “empirically tested models of the causal relationship between attitudes, motivation, and achievement ... attitudes have an indirect effect on achievement” (p. 10). Graham et al. (2007) submitted that learners “with a positive attitude towards writing may invest more effort when composing and choose to write when other options exist, whereas children with a negative attitude may choose to avoid writing whenever possible and invest little energy when they are required to write” (p. 532). Consequently, examining the relationship between writing attitude and writing achievement is an important task.

Similarly, Öz (2015) stated that the core content of attitude/motivational studies in foreign language learning (FLL) and second language acquisition (SLA) is the contention that a positive attitude towards language learning motivates learners and contributes greatly to their achievement in different domains. Svava (2009) is of the view that the study of language attitudes in the context of language learning is important as research has found a correlation

between favorable language attitudes and learners' achievement in a second or foreign language. However, despite the important role of attitudes in language learning situations, Petric (2002) believed that most of the existing studies on L2/FL writing are not concerned with students' points of view. Consequently, this study comes in handy as it investigates the influence of CALL on the writing attitudes and achievement of Saudi EFL learners in a writing test.

Computer Assisted Language Learning (CALL)

Several attempts have been made to define the term CALL. A general definition is that it is a specialized field in applied linguistics that refers to the use of the computer for teaching and learning languages in any context (Gitsaki, 2013). Davies et al. (2000) defined it as "an approach to language teaching and learning in which the computer is used as an aid to presentation, reinforcement and assessment of materials to be learned, usually involving a substantial interactive element" (para. 1).

It is generally believed that using a computer and its various applications in the classroom has enormous benefits for teachers and learners alike (Levy, 1997; Rahimi & Mouri, 2016; Taylor, 1980). When it comes to language learning, the story is no different. Applied linguists and language researchers have shown that proper use of technology and computer-based applications facilitate language learning (Arishi, 2012; Motteram, 2013; Taylor, 1980). A number of taxonomies has been proposed to explain the use of computers in education, in general, and in language learning, in particular. These taxonomies include Tylor's (1980) TTT Framework, which submits that a computer can be used in an educational context as a tutor, tool or tutee and Warschauer's (1996) Typology of CALL Programs, which says that a computer can be used in a language learning context as a tutor, stimulus or tool.

Several studies have been conducted to demonstrate the positive influence of CALL in learning situations. In a study of the impact of CALL on a Taiwanese university students' English language learning, Wang (2011) found that 80% of the participants believed that CALL motivated them and enhanced their English writing skills. Alharbi (2018) conducted an explicatory study to investigate the benefits of CALL in a Saudi language learning context. His study found that CALL helped and motivated ESL/EFL learners and their writing abilities. In studies on the impact of ICT on the writing skills of Saudi EFL learners, Kademi (2018) and (2021) found that students who studied writing using a word processor had a statistically significantly higher achievement in a writing performance test than those who studied writing through traditional methods. This showed that CALL is an effective tool for teaching writing.

Apart from MS Word, there are many applications that can be used to help students improve their writing skills. For example, Effendi and Susanti (2021) study showed the effectiveness of using the Mendeley application in writing scientific papers. The results showed that the Mendeley application could be used easily by teachers in compiling articles and the effectiveness of the response to using the Mendeley application as a Reference Manager also received a high percentage of 83%. And the teacher's interest in using the Mendeley application is also high, namely 81%. Similarly, Al-Jarf (2009) demonstrated how mind-mapping software was used to help students to brain-storm, generate ideas, and relate main ideas and supporting details. The mind-mapping software uses lines, colors, arrows, branches to show connections between the ideas generated on the mind map. Likewise, Sysoyev et al. (2019) used blogs in teaching the writing skills to students: they explored various types of blogs and reviewed their didactic features and methodological functions; suggested a list of

writing skills developed via blogs; and determined the stages of students' writing skills development via blogs.

Methodology

Research Design

This study used the embedded mixed methods research design in which both quantitative and qualitative data are collected and combined in a traditionally quantitative or qualitative research design (Creswell and Clark, 2011). Embedded-experimental design is the variant used. The study adopted a two-phase format in which a supplemental qualitative strand was embedded in a predominant quantitative strand. The data were analyzed using a data merging technique.

Participants

The study was conducted at a technical institute in Saudi Arabia. A total of 74 participants for the dominant quantitative phase of the study were selected through a cluster sampling technique. The 12 participants for the auxiliary qualitative strand were selected using purposive sampling techniques. They were then grouped into experimental and control groups. Demographic data revealed that 100% of them were between the ages of 18 and 25. Despite the obvious deficiency of their English language skills, only 3% rated themselves as beginners. Up to 81% considered themselves as intermediate or upper intermediate. However, none claimed to be proficient. Regarding their ICT skills, 61% assessed themselves as average or advanced. Only 11% reported having low ICT skills.

Instruments and Procedures

In this mixed methods research study, data were collected both quantitatively and qualitatively. The quantitative tools used were the Writing Attitude Survey and the writing performance test. The qualitative tool used was the semi-structured interview. The main reason for using both quantitative and qualitative data collection tools was to enhance the overall design of the study and "boost the validity and dependability of the data" (Zohrabi, 2013, p. 2). In Table 1, the relationship between the research questions, the objective of the study, the data collection tools, the methodological design and the data analysis techniques is shown using Maxwell's (2008) Integrative Model of Research Design.

Table 1. Relationship between Research Questions, Objectives, Data Collection Tools, and Data Analysis Technique

Research Questions	What are the objectives?	What kind of data will answer this?	What type of Analysis will be used?
What is the difference between Saudi EFL learners who were taught writing using CALL and their peers who were taught writing via the traditional methods, in their writing attitudes?	To find out if there is a statistically significant difference between the participants in the two groups in their writing attitudes.	Writing Attitude Survey	Quantitative: Descriptive and Inferential Statistics
What is the relationship between writing attitude and achievement in a writing performance test	To explore the relationship between writing	Writing Performance test and Writing	Quantitative: Descriptive and Inferential Statistics

among the participants in experimental and control groups?	attitude and achievement in a writing task.	Attitude Survey	
How do the follow-up interview findings complement and expand the quantitative results?	To elaborate and provide deeper insights into the survey findings using interviews.	Semi-Structured Interviews	Qualitative: Descriptive Statistics/Semi-structured Interviews Analysis

Note: Adapted from R.S.K. Dzekoe (2013)

All the participants in the experimental and control groups filled out a writing attitude survey and took a writing performance pre-test. After that, they underwent a 16-week long treatment in which the experimental group participants used a CALL software (MS Word) in their composition classes, while the control group participants used traditional, paper-and-pencil methods. At the end of the treatment, both groups took the same writing attitude survey again and a writing performance post-test.

Writing Attitude Survey

This is a structured (or closed-ended) questionnaire originally compiled and used by Podsen (1997) to help educational professionals improve their writing skills and perform writing tasks with more confidence. The survey was not created by Podsen. It was adapted by her from the Daly and Miller (1975) Writing Apprehension Test, which is contained in a book, titled *When a Writer Can't Write: Studies in Writer's Block and Other Composing problems* (edited by Mike Rose in 1985).

The original survey had 20 items each containing a statement. Next to each statement was a five-point Likert-scale, ranging from 1 (Strongly Agree) to 5 (Strongly Disagree). Podsen provided a scoring guide for the survey where "a score of 20 shows very low apprehension; a score of 100 shows very high writing apprehension" (Podsen, 2007, p. 6). In this study, however, 5 stands for Strongly Agree and 1 for Strongly Disagree. Therefore, a score of 15, for example, shows very high writing apprehension and a score of 85 very low writing apprehension. This means that the higher the score, the more positive and confident the writing attitude and the more efficient and effective the writing behavior.

Since the survey was originally designed for professionals and not students, some modifications were made to make it suitable for ESL/EFL learners. To avoid acquiescence bias, 12 out of 17 items on the questionnaire were positively worded and the remaining 5 reverse-coded. Also, some of the items on the questionnaire were repeated using a different wording so as to minimize the possibility of haphazard or random responses, which might contaminate the findings.

Writing Performance Test

The writing performance test, used for both the pre- and post-test, was designed by the researcher in line with the writing curriculum of the institute. It focused on the participants' ability to produce written descriptive essays of moderate length. These are the kinds of writing tasks the participants are exposed to in their program. Appropriateness, relevance and difficulty level were considered in selecting the topics. To get more reliable grades, both tests were handwritten by all the participants. This is because the format of the essays (word-processed or hand-written), rather than their contents, might influence the marks awarded by

graders. According to Arnold, Legas, Pacheco, Russell and Umbdenstock (1990), word-processed essays seemed to receive higher scores because they are easier and faster to score and appear more polished than hand-written ones. A team of experienced raters used a holistic rubric for grading the writing tests. A holistic scale, rather than an analytic one, was used because of its practicality, efficiency, relative validity and reliability as well as being one of the most commonly used rubrics in ESL/EFL programs around the world (Cetin, 2011).

Semi-structured Interview

In this study, data from the interview were used to complement the quantitative findings and answer the mixed methods research question. During face-to-face interviews, participants were asked to clarify or expand their answers by giving examples or evidence to ensure the data collected were as valid as possible. The interviews were conducted in Arabic, the native language of all the participants. For the sake of anonymity, a coding system was used to refer to the respondents.

Validity, Reliability, and Piloting Research Instruments

The tools used to collect the data in this study were validated prior to piloting. The process of validation involved having a panel of experts establish content and face validity of the tools. The panel validated all the instruments and offered valuable feedback on how to improve them. The qualitative tool was subjected to a trustworthiness check. In order to get valid and accurate responses which reflect the real perceptions of the participants, some questions were repeated by rephrasing them.

After validation, the tools were pilot-tested. The Writing Attitude Survey was piloted at two different times on different groups of students. The first piloting was done using ten participants and analysis of their responses revealed a Cronbach alpha of .72. To get a higher alpha, the number of participants was increased to 30 during the second piloting and it rose to .80, which indicated a higher internal consistency of the items of the instrument. Yet, it was lower than .83, which was the alpha obtained for the actual study, as seen in Table 2. The number of items used for the actual study rose to 17 and it took the participants approximately 10 minutes to complete it.

Table 2. *Alpha Reliability of Pilot and Main Study*

Instrument	No. of Pilot Study Items	No. of Main Study Items	Cronbach's Alpha	
			Pilot Study (n =30)	Main Study (n = 74)
Writing Attitude Survey	20	17	.80	.83

Similarly, the writing performance test was piloted twice on some randomly selected students. The interview questions were also piloted on 6 randomly selected students and three EFL instructors. Some modifications and adjustments were made as a result of the piloting.

Findings and Discussion

Research Questions

This study attempted to answer the following three research questions. The first two are quantitative and the last one qualitative.

RQ1: What is the difference in the writing attitudes between Saudi EFL learners who were taught writing using CALL and their peers who were taught writing via traditional methods?

RQ2: What is the relationship between writing attitudes and achievement in a writing performance test among the participants in experimental and control groups?

RQ3: How do the follow-up interview questions complement and expand the quantitative results?

Quantitative and Qualitative Results/Findings

Being a mixed methods research study, both quantitative and qualitative data were collected and analyzed. The two data types were merged at the discussion section by using direct quotations of the respondents to support or refute the quantitative statistical findings, which were presented earlier. The qualitative data were collected via semi-structured interviews with 12 purposively sampled participants.

To enable the qualitative data to be analyzed statistically and decrease bias, they were transformed through “the process of quantizing” or quantification, as recommended by Dornyei (2007), Caracelli and Greene (1993) and Yildirim and Simsek (2011). The reasons given by the participants were categorized into themes and analyzed using descriptive qualitative analysis.

Results / Findings of Research Question 1

To answer RQ1, a hypothesis *that EFL learners who used CALL will have more favorable attitudes towards writing than their peers who used traditional methods of learning writing*, was formed. The data used for testing this hypothesis were collected through Podsén’s (1997) Writing Attitude Survey. Data from this survey were subjected to independent and paired samples *t*-tests. Parametric tests were used because researchers, such as Carifio and Perla (2008), Kuzon, Urbanek, and McCabe (1996), have submitted that while it is agreed that Likert questions or items are ordinal, Likert scales, which consist of sums of many items, are actually interval data. This view was corroborated by Sullivan and Artino (2013), who argued that “parametric tests are sufficiently robust to yield largely unbiased answers that are acceptably close to “the truth” when analyzing Likert scale responses” (p. 541).

However, because the study used the non-equivalent groups design, the researcher felt the need to check a couple of things before testing the post-treatment attitudes of the participants. First, to find out if there were pre-existing differences between the groups in their writing attitudes prior to the treatment, an independent samples *t*-test was conducted. Assumptions of normality and homogeneity of variances were tested and satisfied. Having met those assumptions, the test was carried out and its result revealed no statistically significant difference between the two groups in their pre-treatment attitudes towards writing, $t(72) = -1.221, p = .226$, as can be seen in Table 3. Even though descriptive statistics showed that the mean of the experimental group was almost 3 points lower than that of the control group, the difference couldn’t have been real, as it was statistically insignificant. However, the standard deviations showed that the amount of variability among the experimental group’s scores was higher than that of the control group.

Table 3. *Results of the Independent Samples t-test on the Pre-treatment Writing Attitudes*

Source of Variance	Group	N	Mean	SD	SEM	df	T	Sig.(2-tailed)
Pre-Treatment Attitudes	Experimental	37	50.16	9.915	1.608	72	-1.221	.226
Towards Writing	Control	37	52.78	8.438	1.406			

Secondly, the pre- and post-treatment attitudes of the participants within each group needed to be matched to see if there were gains or losses in the aftermath of the treatment. Therefore, a paired samples *t*-test was done for each group. For the experimental group, the results revealed a statistically significant difference between their pre- and post-treatment writing attitudes, $t(36) = -3.090 = p = .004$, as seen in Table 4. The post-treatment mean was 7.78 points higher than that of the pre-treatment. However, standard deviation revealed a higher variability in the post-treatment scores.

As for the control group, there was no statistically significant difference between the pre- and post-treatment attitudes towards writing, $t(36) = .168, p = .867$, as seen in Table 4. As a matter of fact, the pre-treatment mean was 0.39 points higher than that of the post-treatment. In summary, the paired samples *t*-test showed that, while the experimental group gained 7.78 and had statistically significant differences between the pre- and post-treatment attitudes towards writing, the control group actually lost 0.39 only and had a statistically insignificant difference.

Table 4. Paired Samples Test on Pre- and Post-treatment Writing Attitudes

Group	Source of Variance	Mean	SD	t	df	Sig. (2-tailed)
Experimental Group	Pre_Treat. Wr. At.	50.75	9.851	-3.090	36	.004
	Post_Treat.Wr. At.	58.53	12.2467			
Control Group	Pre_Treat. Wr. At.	53.39	8.396	.168	36	.867
	Post_Treat.Wr. At.	53.00	10.170			

Having established that the groups were almost similar prior to the experiment, another independent samples *t*-test was run to compare the mean scores in the post-treatment writing attitudes. The result of the test showed that the experimental group had a statistically significantly higher mean score on the post-treatment attitudes towards writing survey than the control group, $t(72) = 2.029, p = .046$, as seen in Table 5. The mean of the experimental group was 5.52 points higher than that of the control group. Based on this finding, it could be argued that the intervention has had a positive effect on the attitudes of the participants towards writing. Therefore, the alternative hypothesis was accepted.

Table 5. Results of the Independent Samples *t*-test on the Post-treatment Writing Attitudes

Group	Source of Variance	Mean	SD	t	df	Sig. (2-tailed)
Experimental Group	Post_Treat.Wr. At.	58.52	12.246	2.029	727	.046
Control Group		53.00	10.170			

Discussion on Research Question 1

Research studies on the effects of CALL on ESL/EFL learners' attitudes towards writing often present ambiguous and contradictory findings (Bangert-Drowns, 1993). While some researchers, such as Akyel and Kamisli (1999), Chadwick and Bruce (1989), Daiute (1983), Neu and Scarcella (1991), (1987), Phinney (1991), Phinney and Mathis (1998), Tzotzou and Tourabelis (2015) and Yoon and Hirvela (2004) argued that CALL leads to positive writing attitudes, others reported zero effects or even contrary findings (see Bangert-Drowns, 1993).

However, there is evidence in this study to show that EFL learners in the experimental group who used CALL for writing tasks exhibited more favorable writing attitudes than the learners in the control group who used traditional methods of writing. This finding is in harmony with that of other researchers, such as Hashemian and Heidari (2013), Hawisher (1989), Karakas (2011), Phinney (1991), Teichman and Poris (1985) and Van Ittersum and Ching (2013), who

all found that attitudinal benefits were gained when students used the word processor for writing. Similarly, Pennington (1993) found noticeable improvements in learners' writing attitudes as a result of exposure and access to CALL. In addition, Zaid (2011) reported that "research has showed that ESL/EFL writers had demonstrated improved attitudes ... and decreased apprehension when they write with computers ..." (p. 78).

Likewise, this finding may not be unconnected with that of other researchers that ESL/EFL learners often exhibit favorable attitudes towards all the aspects of EFL learning. For instance, in an investigation on the psychological variables that influence the undergraduate students of a Jordanian university, Tahaineh and Daana (2013) found that 88.8% had positive attitudes towards learning English in general. A similar finding was reported by Al Asmari (2013), who investigated the attitudes of Saudi freshmen at Taif University towards various dynamics of English language learning and reported that they showed positive attitudes towards learning the English language. Al Samadani and Ibnian (2015) as well as Alluhaybi (2015) reported that Arab students have overall positive attitudes towards learning the skills of EFL.

The interview responses overwhelmingly corroborated this finding, as 100% of the experimental group interviewees responded positively to the questions: '*Do you enjoy writing in English classes?*' and '*Do you like writing activities in English classes?*' They gave many reasons for their positive writing attitudes. For instance, Participant 4 said he liked EFL writing "*because it increases and improves students' writing skills.*" Participant 7 said "*writing helps learners improve their language, enhance their writing skills and learn more vocabulary items.*" Participant 5 liked writing "*because it gives learners a chance to freely express their opinions.*" On the other hand, 10% of the interviewed participants from the control group indicated negative writing attitudes by describing it as "*a repetitive and boring task*" (Participant 10). Participant 9 also said he didn't like writing classes because "*my teacher always gives us too many tasks, and that's tiring.*" This shows that in overall, the participants have demonstrated positive attitudes towards writing.

Moreover, the fact that the experimental group participants expressed more favorable writing attitudes than those in the control group agrees with the quantitative finding and, therefore, answered the mixed methods research question, which asked if the interview data complemented and expanded the quantitative findings.

Results / Findings of Research Question 2

To answer RQ2, a hypothesis that *there is a strong positive relationship between attitudes towards writing and achievement in the writing performance test among the participants in experimental and control groups* was formed. The data used to test this hypothesis were jointly collected from Podsen's (1997) Attitudes towards Writing Survey and the results of the writing performance test. Pearson's product-moment correlation coefficient tests were run to test this hypothesis. However, prior to conducting the first test, some preliminary analyses were done to ensure no assumptions were violated.

The results of the test revealed a very strong positive correlation between the pre-treatment writing attitudes and the pre-test achievement in the writing performance test among participants in both groups, $r(72) = .933, p < .001$, as seen in Table 6. The pre-treatment attitude was positively correlated with the pre-test achievement in the writing performance test. This finding demonstrated that as the pre-treatment writing attitudes became more

favorable, scores in the pre-test writing performance test also went higher, indicating that writing attitudes could predict writing achievement.

Table 6. *Correlation between Pre-Treatment Writing Attitudes and Pre-Test Scores in the Writing Performance Test.*

		Pre-Treatment Attitudes Towards Writing	Pre-Test scores in Writing Performance Test
Pre-Treatment Attitudes Towards Writing	Pearson Correlation	1	.933**
	Sig. (2-tailed)		.000
	N	74	74
Pre-Test scores in Writing Performance Test	Pearson Correlation	.933**	1
	Sig. (2-tailed)	.000	
	N	74	74

** . Correlation is significant at the 0.01 level (2-tailed).

Another Pearson product-moment correlation coefficient test was performed to examine the correlation between the post-treatment writing attitudes and the post-test scores of the writing performance test. The results also revealed a very strong positive correlation between post-treatment attitudes towards writing and post-test achievement in the writing performance test, $r(72) = .921, p < .001$, as seen in Table 7. This suggested that the post-treatment attitude was positively correlated with the post-test achievement in the writing performance test. This finding showed that as the post-treatment writing attitudes became more favorable, scores on the post-test writing performance test also increased.

Table 7. *Correlation between Post-Treatment Writing Attitudes and Post-Test Scores in the Writing Performance Test.*

		Post-Treatment Attitudes Towards Writing	Post-Test Performance on Writing Performance Test
Post-Treatment Attitudes Towards Writing	Pearson Correlation	1	.921**
	Sig. (2-tailed)		.000
	N	68	68
Post-Test Performance on Writing Performance Test	Pearson Correlation	.921**	1
	Sig. (2-tailed)	.000	
	N	68	68

** . Correlation is significant at the 0.01 level (2-tailed).

Briefly, the results of both tests revealed a very strong positive correlation between achievement in the writing performance test and attitudes towards writing among the participants in both groups. Therefore, the alternative hypothesis was accepted.

Discussion on Research Question 2

The finding of this hypothesis agrees with those of other researchers, such as Badrasawi, Zubairi and Idrus (2016), Hashemian and Heidari (2012), etc. Others are Al-Samadani and Ibnian (2015), who explored the attitudes of Umm Qura University students towards learning EFL and found that those with high GPAs had the highest positive attitudes towards learning English. Based on that, they concluded that “there was a strong positive correlation between the two variables (Saudi EFL students' attitudes towards learning English and their GPAs) $r = .79, n = 112, p < .01$, with high levels of attitude towards learning English associated with high level GPA” (p. 99). Moreover, Erkan and Saban (2011) conducted a study to identify

whether the writing performance of Turkish EFL students was related to their writing apprehension, self-efficacy in writing and/or attitudes towards writing. Their finding suggested that while writing apprehension and writing self-efficacy were negatively correlated, writing apprehension and writing attitude were positively correlated. Sedaghatkar (2018), who investigated the effects of CALL on immediate and delayed retention of vocabulary among Iranian university students, submitted that “students’ positive attitudes towards Computer-Assisted Learning (CALL) is an important factor in mastering language” (p. 233).

Qualitative data from the semi-structured interviews corroborated this finding. Extreme sampling was specifically used in the interview to observe the similarities or differences between the high and low achievers in their attitudes towards writing. From the responses, it was found that more than 83% of the high achievers in both groups answered positively to the questions: ‘*Do you enjoy writing in English Classes?*’ and ‘*Do you like writing activities in English classes?*’ This showed that they had very favorable writing attitudes. They gave many reasons for their positive attitudes. The positive responses given included “*It increases and improves students’ writing skills,*” “*(It) helps learners improve their language, enhance their writing skills and learn more vocabulary items,*” and “*It gives learners a chance to freely express their opinions.*” On the other hand, most (67%) of the low achievers from both groups indicated negative attitudes towards writing. The negative responses included “*It is a repetitive and boring task*” and “*It’s tiring.*”

The fact that 83% of the higher achievers from both groups expressed very favorable attitudes towards writing and 67% of the low achievers from both groups revealed negative writing attitudes supports the hypothesis, agrees with the quantitative finding and, therefore, answered the mixed methods research question, which asked if the interview data complemented and expanded the quantitative findings.

However, some researchers found a negative correlation between attitudes towards writing and achievement in the writing tasks. For example, Alluhaybi (2015), who investigated the relationship between writing attitudes, apprehension and self-efficacy beliefs and their relationship with writing competence among Saudi learners of English as a foreign language (EFL), reported that “in contrast to the findings in literature, attitudes, apprehension and self-efficacy beliefs were not among the factors that affect writing performance. Similarly, none of these factors predicted writing performance” (p. 376).

Major Findings

The major findings of this study are:

1. The students who learned writing using CALL had more favorable attitudes towards writing than those who used paper-based writing methods. The difference was statistically significant.
2. There was a strong positive correlation between writing attitude and writing achievement. The correlation was statistically significant.
3. There was evidence to show that participants in both groups had favorable writing attitudes. However, experimental group participants showed more favorable writing attitudes and had higher achievements in the writing performance test than those in the control group.
4. The qualitative findings corroborated the quantitative results.

Conclusion and Recommendations

Based on the results of this study, CALL has improved both the writing attitudes and writing achievement of EFL learners. This is a very interesting finding, as it reveals that to effectively teach 21st century learners (who are predominantly 'digital natives,' as Prensky (2001) refers to them), it is almost inevitable to use some forms of CALL applications.

The study, therefore, recommends that EL educators and policymakers make the integration of CALL a top priority because of its pedagogical benefits in facilitating language learning. Also, in view of the importance of affective factors in learning contexts, teachers should understand how positive attitudes are formed and developed and how to use them to facilitate learning. Moreover, students should make good and innovative use of the computer to improve their English language learning, especially in the area of writing.

REFERENCES

- Abidin, M. J., Pour-Mohammadi, M., & Alzwari, H. (2012). EFL students' attitudes towards learning English language: The case of Libyan secondary school students. *Asian Social Science*, 8(2). doi:10.5539/ass.v8n2p119.
- Abu Ghararah, A., & Hamzah, A. (1998). *Teaching English as a foreign language: Procedures, techniques and activities*. Riyadh: Tawbah Library.
- AbuSeileek, A. F. (2006). The use of word processor for teaching writing to EFL learners in King Saud University. *Journal of King Saud University*, 19(2), 1-15.
- Ackerman, J. D. (2006). *Motivation for writing through blogs* (Unpublished doctoral dissertation). Bowling Green State University.
- Akyel, A., & Kamisli, S. (1999). Word processing in the EFL classroom: Effects on writing strategies, attitudes, and products. *Writing in an Electronic Medium: Research with Language Learners*, 27-60.
- Al Asmari, A. R. (2013). Saudi university undergraduates' language learning attitudes: A preparatory year perspective. *International Journal of Asian Social Science*, 3(11), 2288-2306.
- Al Khateeb, A. (2014). *Wiki-Mediated Collaborative Writing (WMCW): An investigation of learners' perceptions and the impact of WMCW on preparatory year medical students studying English language in a university in Saudi Arabia* (Unpublished doctoral dissertation). University of Southampton.
- Alharbi, S. H. (2018). Using CALL in Teaching Writing: An Explicatory Study on its Efficacy for ESL/EFL Learners. *Arab World English Journal (AWEJ) Special Issue on CALL* (4). DOI: <https://dx.doi.org/10.24093/awej/call4.1>
- Al-Jarf, R. (2009). Enhancing Freshman Students' Writing Skills with a Mind-Mapping Software. In *Conference proceedings of eLearning and Software for Education (eLSE)* (No. 01, pp. 375-382). "Carol I" National Defence University Publishing House.
- Al-Kahtani, S. A. (2001). Computer-assisted language learning in EFL instruction at selected Saudi Arabian universities: Profile of faculty (Doctoral dissertation, Indiana University of Pennsylvania) [Abstract].
- Alluhaybi, M. (2015). Psychology and EFL writing. *Procedia - Social and Behavioral Sciences*, 192, 371-378.
- Al-Samadani, A. H., & Ibnian, S. (2015). The relationship between Saudi EFL students' attitudes towards learning English and their academic achievement. *International Journal of Education and Social Science*, 2(1), 92-102.
- Alsamadani, H. A. (2010). The relationship between Saudi EFL students' writing competence, L1 writing proficiency, and self-regulation. *European Journal of Social Sciences*, 16(1), 53-63.

- Alshalan, W. F. (2012). *Relative Effectiveness of teaching writing as a process vs product using Moodle to Saudi EFL students of Imam University* (Unpublished master's thesis). Imam University, Riyadh, Saudi Arabia.
- Arishi, S. A. (2012). Attitudes of students at Saudi Arabia's industrial colleges toward Computer-Assisted Language Learning. *Teaching English with Technology, 1*, 38-52.
- Arnold, V., Legas, J., Obler, S., Pacheco, M. A., Russell, R., & Umbdenstock, L. (1990). *Do students get higher scores on their word-processed papers? A study of bias in scoring hand-written vs. word-processed papers* (pp. 2-33, Rep. No. Report No. 143). Rio Hondo College, C.A.: Whittier. (ERIC Document Reproduction Service No. ED 345 818).
- Badrasawi, K. J., Zubairi, A., & Idrus, F. (2016). Exploring the relationship between writing apprehension and writing performance: A qualitative study. *International Education Studies, 9*(8), 134. doi:10.5539/ies.v9n8p134.
- Bangert-Drowns, R. L. (1993). The word processor as an instructional tool: A meta-analysis of word processing in writing instruction. *Review of Educational Research, 63*(1), 69. doi:10.2307/1170560.
- Beatty, K. (2013). *Teaching and researching computer-assisted language learning*. New York: Longman.
- Boudjadar, T. (2015). ICT in the writing classroom: The pros and the cons. *International Journal of Applied Linguistics and English Literature, 4*(1). doi:10.7575/aiac.ijalel.v.4n.1p.8.
- Caracelli, V. J., & Greene, J. C. (1993). Data analysis strategies for mixed-method evaluation designs. *Educational Evaluation and Policy Analysis, 15*(2), 195. doi:10.2307/1164421.
- Carifio, J., & Perla, R. (2008). Resolving the 50-year debate around using and misusing Likert scales. *Medical Education, 42*(12), 1150-1152. doi:10.1111/j.1365-2923.2008.03172.x.
- Cetin, Y. (2011). Reliability of raters for writing assessment: Analytic-Holistic, Analytic-Analytic, Holistic-Holistic. *Mustafa Kemal Üniversitesi Sosyal Bilimler Enstitüsü Dergisi, 8*(16), 471-486.
- Chadwick, S., & Bruce, N. (1989). The revision process in academic writing: From pen & paper to word processor. *Hong Kong Papers in Linguistics and Language Teaching, 12*.
- Creswell, J. W., Klassen, A. C., Clark, V. L., & Smith, K. C. (2011). Best practices for mixed methods research in health sciences. *PsycEXTRA Dataset, 2094-2103*. doi:10.1037/e566732013-001.

- Cumming, A. (2013). Assessing integrated writing tasks for academic purposes: Promises and perils. *Language Assessment Quarterly*, 10(1), 1-8. doi:10.1080/15434303.2011.622016
- Daiute, C. A. (1983). The computer as stylus and audience. *College Composition and Communication*, 34(2), 134. doi:10.2307/357400.
- Daly, J. A., & Miller, M. D. (1975). The empirical development of an instrument to measure writing apprehension. *Research in the Teaching of English*, 9(3), 242-249.
- Davies, G., Walker, R., Rendall, H., & Hewer, S. (2000). Introduction to computer assisted language learning (CALL). Module 1.4. Retrieved from http://www.ict4lt.org/en/en_mod1-4.htm
- Dörnyei, Z. (2005). *The psychology of the language learner: Individual differences in second language acquisition*. New York, NY: Routledge.
- Dörnyei, Z. (2007). *Research methods in applied linguistics: Quantitative, qualitative, and mixed methodologies*. Oxford: Oxford University Press.
- Dzekoe, R. S. (2013). *Facilitating revision in the English as a second language (ESL) composition classroom through computer-based multimodal composing activities: A case study of composing practices of ESL students* (Unpublished doctoral dissertation). Iowa State University.
- Effendi, M. M., & Susanti, R. D. (2021). Utilization of the Mendeley Application as Reference Manager For High School Teachers. *ABDIMAS: Jurnal Pengabdian Masyarakat*, 4(2).
- Ellis, R. (2000). Task-based research and language pedagogy. *Language Teaching Research*, 4(3), 193-220. doi:10.1075/tblt.1.07tas
- Erkan, Y. D., & Saban, A. I. (2011). Writing performance relative to writing apprehension, self-efficacy in writing, and attitudes towards writing: A correlational study in Turkish tertiary-level EFL. *The Asian EFL Journal Quarterly*, 13(1), 163-191.
- Etchison, C. (1989). *Computers and composition*, 6(2).
- Fakeye, D. (2010). Students' personal variables as correlates of academic achievement in English as a second language in Nigeria. *Journal of Social Sciences*, 22(3), 205-211.
- Fidaoui, D., Bahous, R., & Bacha, N. (2010). CALL in Lebanese elementary ESL writing classrooms. *Computer Assisted Language Learning*, 23, 151-168.
- Gardner, R. C., & Lambert, W. E. (1972). Attitudes and motivation in second-language learning.
- Gitsaki, C. (2013). Computer assisted language learning (CALL). In *The Routledge encyclopaedia of second language acquisition* (pp. 106-109).

- Graham, S., Berninger, V., & Fan, W. (2007). The structural relationship between writing attitude and writing achievement in first and third grade students. *Contemporary Educational Psychology, 32*(3), 516-536. doi:10.1016/j.cedpsych.2007.01.002.
- Graham, S., Harris, K., & Hebert, M. (2011). *Informing Writing: The benefits of formative assessment. A report from Carnegie Corporation of New York*. (Rep.). Carnegie Corporation of New York.
- Hashemian, M., & Heidari, A. (2013). The relationship between L2 learners' motivation/attitude and success in L2 writing. *Procedia - Social and Behavioral Sciences, 70*, 476-489. doi:10.1016/j.sbspro.2013.01.085.
- Hawisher, G. E. (1989). Research and recommendations for computers and composition. *Critical perspectives on Computers and Composition Instruction*, 44-69.
- Hedge, T. (1991). *Writing resource book for teachers*. Oxford: Oxford University Press.
- Huwari, I., & Al-Khasawneh, F. (2013). The reasons behind the weaknesses of writing in English among pre-year students' at Taibah University. *English for Specific Purposes World, 38*(14), 1-9.
- Jafarian, K., Soori, A., & Kafipour, R. (2012). The effect of computer assisted language learning (CALL) on EFL high school students' writing achievement. *European Journal of Social Sciences, 27*(2), 138-148.
- Jahin, J. H. (2012). The effect of peer reviewing on writing apprehension and essay writing ability of prospective EFL teachers. *Australian Journal of Teacher Education, 37*(11). doi:10.14221/ajte.2012v37n11.3.
- Jahin, J. H., & Idrees, M. W. (2012). EFL major student teachers' writing proficiency and attitudes towards learning English. *Umm Al-Qura University Journal of Educational and Psychologic Sciences, 4*(1), 10-72.
- Jaradat, R. M. (2014). Students' attitudes and perceptions towards using m-learning for French language learning: A case study on Princess Nora University. *International Journal of Learning Management Systems, 2*(1), 33-44. doi:10.12785/ijlms/020103.
- Kademi, A.S. (2012). The Impact of ICT Towards Saudi EFL Students' Writing Skills: A Quasi-Experimental Study. *ELT Worldwide – Journal of English Language Teaching, 8*(2). doi.org/10.26858/eltww.v8i2.20784.
- Kademi, A.S. (2018). *The Impact of Computer on Tertiary Level Saudi EFL Learners' Writing Skills: A Case Study* (Unpublished doctoral dissertation). University of Bakht er-Ruda, Republic of Sudan.
- Karakas, A. (2011). Motivational attitudes of ELT students towards using computers for writing and communication. *Teaching English with Technology, 11*(3), 37-53.
- Kuzon Jr, W. M., Urbanek, M. G., & McCabe, S. (1996). The seven deadly sins of statistical analysis. *Annals of Plastic Surgery, 37*(3), 265-272.

- Latif, M. A. (2007). The factors accounting for the Egyptian EFL university students' negative writing affect. *Essex Graduate Student Papers in Language and Linguistics*, 9(7), 57-82.
- Levy, M. (1997). *Computer-assisted language learning: Context and conceptualization*. Oxford: Clarendon Press.
- Maxwell, J. A. (2008). Designing a qualitative study. *SAGE handbook of applied social research methods*, 2, 214-253.
- Motteram, G. (2013). *Innovations in learning technologies for English language teaching*. London: The British Council.
- Neu, J., & Scarcella, R. (1991). Word processing in the ESL writing classroom: A survey of student attitudes. *Computer-Assisted Language Learning and Testing: Research Issues and Practice*, 169-187.
- Oz, F. (2006). *Uygulamalı Türkçe Öğretimi*, Anı Yayıncılık, Ankara.
- Öz, H. (2015). Investigating the relationship between foreign language learning and call attitudes among EFL freshman students. *Procedia-Social and Behavioral Sciences*, 176, 1041-1049.
- Pennington, M. C. (1993). A critical examination of word processing effects in relation to L2 writers. *Journal of Second Language Writing*, 2(3), 227-255. doi:10.1016/1060-3743(93)90020-4.
- Petric, B. (2002). Students' attitudes towards writing and the development of academic writing skills. *The Writing Center Journal*, 22(2), 9-27.
- Phinney, M. (1991). Computer assisted writing and writing apprehension in ESL students. In *Computer Assisted Language Learning and Testing: Research Issues and Practices*. New York: Newbury House.
- Phinney, M., & Mathis, C. (1998). ESL student responses to writing with computers. *TESOL Newsletter*, 24(2), 30-31.
- Podsen, I. (1997). *Written expression: The principal's survival guide*. Larchmont, NY: Eye on Education.
- Prensky, M. (2001a). Digital natives, digital immigrants (part 1). *On the Horizon*, 9(5), 1-6. doi:10.1108/10748120110424816.
- Prensky, M. (2001b). Digital natives, digital immigrants (part 2): Do they really think differently? *On the Horizon*, 9(6), 1-6. doi:10.1108/10748120110424843.
- Rahimi, A. P., & Mouri, S. (2016). The impact of computer-assisted language learning on Iranian EFL students' vocabulary learning. *Global Journal of Foreign Language Teaching*, 6(4), 210. doi:10.18844/gjflt.v6i4.1673.

- Raimes, A. (1983). *Techniques in teaching writing*. Oxford: Oxford University Press.
- Rose, M. (1985). When a writer can't write. In *Studies in the writer's block and other composing-process problems*.
- Sedaghatkar, M. (2018). The effect of computer-assisted language learning (CALL) on immediate and delayed retention of vocabularies in general English course. *International Journal of Applied Linguistics and English Literature*, 7(1), 231-238. doi:10.7575/aiac.ijalel.v.7n.1p.231.
- Sharadgah, T. A. (2013). Writing in an Internet-based environment: Improving EFL students' writing performance through text-based chat. *International Journal of Humanities and Social Science*, 3(14), 256-266.
- Shukri, N. A. (2014). Second language writing and culture: Issues and challenges from the Saudi learners' perspective. *Arab World English Journal*, 5(3).
- Soleimani, H., & Hanafi, S. (2013). Iranian medical students' attitudes towards English language learning. *International Research Journal of Applied and Basic Sciences*, 4(12), 3816-3823.
- Sturm, J. M. & Rankin-Erickson, J. L. (2002). Effects of Hand-Drawn and Computer-Generated Concept Mapping on the Expository Writing of Middle School Students with Learning Disabilities. *Learning Disabilities Research and Practice*, 17(2), 124-139. <https://doi.org/10.1111/1540-5826.00039>.
- Sullivan, G. M., & Artino, A. R. (2013). Analyzing and interpreting data from Likert-type scales. *Journal of Graduate Medical Education*, 5(4), 541-542.
- Svara, C. (2009). *English reconsidered-investigating language attitudes of Austrian high school and vocational college students*. na.
- Sysoyev, P. V., Evstigneev, M. N., & Evstigneeva, I. A. (2019). Teaching writing skills to students via blogs. In *The International Conference Going Global through Social Sciences and Humanities* (pp. 210-218). Springer, Cham.
- Tahaineh, Y., & Daana, H. (2013). Jordanian undergraduates' motivations and attitudes towards learning English in EFL context. *International review of social sciences and humanities*, 4(2), 159-180.
- Taylor, R. (1980). *The computer in the school: Tutor tool, tutee*. Nueva York: Teachers college.
- Teichman, M., & Poris, M. (1985). Wordprocessing in the classroom: Its effects on freshman writers.
- Tzotzou, M., & Tourabelis, M. (2015). Fostering EFL learners' writing skills using word processing within a computer-assisted process-writing framework.
- Van Ittersum, D., & Ching, K. L. (2013). Composing text/shaping process: How digital environments mediate writing activity. *Computers and Composition Online*.

- Victori, M., & Lockhart, W. (1995). Enhancing metacognition in self-directed language learning. *System*, 23(2), 223-234. doi:10.1016/0346-251x(95)00010-h.
- Wang, P. (2011). The effect of computer-assisted whole language instruction on Taiwanese university students' English learning. *English Language Teaching*, 4, 10-20.
- Warschauer, M. (1996). Motivational aspects of using computers for writing and communication. *Telecollaboration in Foreign Language Learning*, 29-46.
- Yıldırım, A., & Şimşek, H. (2011). *Sosyal bilimlerde nitel araştırma yöntemleri*. Ankara: Seçkin.
- Yoon, H., & Hirvela, A. (2004). ESL student attitudes toward corpus use in L2 writing. *Journal of Second Language Writing*, 13(4), 257-283.
- Zaid, M. A. (2011). Effects of web-based pre-writing activities on college EFL students' writing performance and their writing apprehension. *Journal of King Saud University - Languages and Translation*, 23(2), 77-85. doi:10.1016/j.jksult.2011.04.003.
- Zohrabi, M. (2013). Mixed method research: Instruments, validity, reliability and reporting findings. *Theory and Practice in Language Studies*, 3(2). doi:10.4304/tpls.3.2.254-262.

EFFECT OF POWERPOINT FOR LECTURE ROOM INSTRUCTIONAL PRESENTATION IN LIBRARY AND INFORMATION SCIENCE EDUCATION IN NIGERIAN UNIVERSITIES

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Abstract

This study examined the effect of Microsoft PowerPoint lecture room presentation in library and information science education in Nigerian University Environments. Study was guided by two research questions and two corresponding hypotheses which were tested at $P < 0.05$ level of significance. Quasi experiment research design was adopted. It was a pre-test, post-test, non-randomized experimental and control groups. Population of study consisted of 1018 undergraduate students of library and information science (LIS) in five (5) Universities in North-Western States Nigeria. Purposive sampling was used. Two universities, consisting 307 undergraduate students were used in this study. Two Instruments were used for data collection; Treatment PPP and Test Instrument (LISAIQ) vs (LISART) consists of fifty multiple choice questions. Content validated was ensured by experts and specialists from the Universities. Instruments were trial tested at one of the Universities., (which was not part of study sample). Reliability coefficient of 0.92 was obtained using Kuder-Richardson (KR - 21). While interest questionnaire obtained 0.89 using Cronbach Alpha. Data was analyzed viz descriptive and inferential statistics. It was discovered that, the technology integrated pedagogies (Microsoft PowerPoint) experimental group have significant effect on library and information science (LIS) undergraduate students' academic outcomes. Conclusion and recommendations were made that, university educators should make efforts to ensure the adoption of Microsoft PowerPoint Presentation in their lecture/classroom's instructional presentation in university.

Keywords: MS-PowerPoint, Instructional, Library and Information Science, Nigeria Universities

Introduction

Microsoft PowerPoint Presentation (MSPPP) is the use of Microsoft Office Program that can enable a person/teacher/lecturer to create slide-based presentations for pedagogies/instructional/teaching. PowerPoint developed as a Microsoft Office Program makes electronic slide for lecture/classroom presentation shows. Reports show that, more than 1.25 million PowerPoint presentations take place in most educational institutions every hour around the world (Tuft, (2017)). PowerPoint has been greatly used as presentation technological software that originated in the world of business but has now become

encountered in the world of instructional technology and education at large. In 1990 PowerPoint was launched as part of Microsoft Office Suite, with its original name called Presenter. While by 1997, all PowerPoint were linear. The PowerPoint 1997 was incorporated with the ability to make non-linear transitions without users having to learn programming into it. PowerPoint consists of slides or pages for lecture/classroom presentations. These enables user to place text, graphics, movies, sound or other types of multimedia on both slides. Such presentations can be printed or viewed on a computer to transmit the information to an overhead projector, interactive whiteboard or online webcasting programs, as illuminate live (Zdaniuk, Jamie, Gruman, & Scott, 2017). Also, in supports by Nouri & Douglas (2018), that, PowerPoint presentations provide the opportunity to combine many of those tools into one place. In one lecture, you can easily incorporate speech, text, images, videos and audio. In recent years, lecturers have access to the teaching and learning tools that supports and boost learners' academic outcomes in university lecture/classrooms. Also, PowerPoint templates to enable good presentation principle as the number of Pao-NanChou, Chi-ChengChang & Pei-FenLu, (2017), lines of information provided per slide and appropriate font sizes and types, etc. Therefore, using the styles of the default templates can effectively improve the clarity and composition of a library and information science difficult concepts in a teaching and learning process in Nigerian University Environments.

Therefore, appropriate use of technology integrated pedagogy/Microsoft PowerPoint can enhance the lecture/classrooms teaching and learning experience in the university education for both lecturers and students. MSPP is valuable for this supporting lecture room encouragement and assist lecturers by facilitating the bases of a classroom presentation in a skilled manner. This is used to deliver all appropriate lecture room content to undergraduate students, as well as delivering staff development gatherings and used for pedagogy (Chigona, 2018 and Fletcher, 2019). Also, its uses have been cautiously reflected and considered in terms of pedagogy. PowerPoint is an instructional tool designed to develop ideas, skills and organize thinking and to enable critical thinking, recall, comprehension and writing in all curriculum areas. Therefore, with the increase in the availability of technology (Microsoft PowerPoint) utilization, and its attention is now overbearing how Library and Information Science lecturers in university educational institutions should utilize technology integration (PowerPoint) in order to best support their undergraduate students learning for the betterment and increase of their academic interest level and also looking at their retention abilities.

Instructional technologist has drawn attention to area for lecturers' professional development, in order to boost their students' academic interest and retention with over 75% of educational institutions integrating technology pedagogies for the lecture/classroom instructional. Also, more than 94% of lectures around the globe concur that technology is a priority and 73% of lecturers are interested in the use of technology in the lecturer room in universities education for their students' needs. The need for technology integration has significantly upsurge in past decade, with Westbrook, Kaur, (2019) and Westbrook, Durrani, Brown, Orr, Pryor, Boddy & Salvi, (2017) many funds being allocated for technology integration in universities education with majority of the lecturers becoming more attracted of utilizing technology integrated pedagogies (PowerPoint) into their lecture room. Thus, with the advances in technology and technological resources eg (PowerPoint), most lecturers are beginning to integrate technology pedagogies on a more frequent basis. More so, from 2011 to date, more than 79% of lecturers utilize technology during teaching and learning process at least twice a week (Jung, 2019). This shows a 3% boost in the number of lecturers utilizing technology in their teaching and learning per week and a 3% boost in the number of lecturers utilizing

technology (PowerPoint Presentation) on a daily basis in order to enhance their undergraduate student academic outcomes.

Library and Information Science education is a very vital component of every university educational system. The fact is that, Bandyopadhyay, (2018) it is concerned with the training of librarians to acquire the competences and skills that will equip them in the task of information delivery. That is why Anderson, (2017) and Bala, (2016) refers, to Library and Information Science education as the exposure of students to the body of knowledge, attitudes, behaviors and the skills they require to perform their task effectively in the educational institutions and the wider community. This process consists of a programme designed for improving the pedagogical fitness of librarians for the jobs of educating and informing instructors/educators, researchers and learners at specified level of education. This is for the need to utilize and integrate technology pedagogy (Microsoft PowerPoint) in Library and Information Science lecture/classrooms in the university education for their undergraduate student boost in academic interest and retention.

Academic Interest has been described as a cause of attention, an attribute of thoughtfulness or as identical with thoughtfulness in teaching and learning process, its special importance lies in its intimate linkage with the mental activity or thoughtfulness. Interest is also a feeling of recognition with someone and some specification, thing or other people. Interest is seen as a kind of morality accompanying and stimulating consideration. In support Al-Hariri & Al-Hattami, (2017) and Yüzüncü, (2011) interest is the focusing of the sense organs on or giving concentration to some situation, object, activity or person. Interest is an achievement of experience rather than a gift which can either cause or result to motivation. Academic interest is a psychological predisposition demonstrated by undergraduate students when trying to do an activity, something or knowledge understanding. Explaining that, academic interest means undergraduate students' positive feelings of recognition towards the study that presents an intensive attitude of students to study (Northwest Evaluation, Association, 2016). Academic interest in a teaching and learning process or a certain subject matter, can improve student engagement in the teaching and learning process, increase their interest in what is being taught, strengthen their motivation to learn, and make learning experiences more relevant and meaningful. Students interest in any topic holds so much power. More so, the amount of interest in studying helps students to retain the well utilization of technology pedagogies use for learning, which may eventually boost the students' academic retention ability.

While Academic Retention simply refers by Warschauer & Matuchniak, (2016) on the other hand how well a person remembers after an interval of time without practice and that is the difference between what is initially learnt and what is later forgotten. However, intensified retention and understanding of course concepts might be possible through the use of technological pedagogy (Microsoft PowerPoint Presentation) real-world contexts. It is believed that if students are able to understand course concepts, their understanding will be more sustained than merely memorizing of data, a list of facts, information and formulas. More so, retaining the course concepts gives the students a strong foundation to build on and is necessary to be efficient in learning new course concepts and eventually to the workforce. Significantly the use of technology integrated pedagogy (PowerPoint Presentation) should be encouraged as it gains the favorur of information and communication technology (ICT), as lecture room is for learning and what is learnt should be remembered. Therefore, what has been learned is needed for everyday life, carrier and for further education. In Van-Dat & Tran (2018) describes and explained that, retention of learning is measured with two tests: The

initial test and the delayed retention test. Stated that, initial test is the test employed at the time of instruction or immediately thereafter. While the delayed retention tests are those tests administered two or more weeks after instruction and initial testing to measure retained knowledge which with the incorporation and integration of technology pedagogy (Microsoft PowerPoint Presentation) in media resources and services in information work of Library and Information Science lecture/classroom can be highly efficient and effective in university education.

Statement of the Problem

Media resources and services in information work is one of the Library and Information Science core course studied in tertiary institutions. It is central to many academic institutions of learning, such that their graduates provide services to staff, researchers and students to support the teaching and learning in such educational institutions. Library and Information Science students are made to use whatever is available to them to learn all the basics and rudiments of the course. Their individual and collective efforts culminate in their achievement at the end of the programme. With all the rigors and intricacies of studying Library and Information Science, undergraduate students are expected to graduate with a resounding success.

In spite of the above reason, undergraduate students' Academic Achievement, Interest and Retention Level in media library, both in the state and federal universities in North-Western states and Nigeria at large, seem to be low. Available research findings have ascribed the students' poor academic achievement, lack of interest and low retention level to a number of factors including student's non-chalant attitudes towards Library and Information Science learning, lack of readiness towards the use of modern technological pedagogies, unavailability and low usage of technological resources for teaching (Boor, 2021). Moreover, the Lecturers still cling to the Teacher-Centred methods of instruction which do not permit effective learning and achievement. In addition, we also have poor teaching and learning environment and poor method of instruction (Bauer & Kenton, 2017 and Bandyopadhyay, 2018). Therefore, there is need to exploit alternative ways of implementing and integrating technology pedagogy (Microsoft PowerPoint) in media resources and services in information work education of Library and Information Science curriculum in the midst of this national challenges that will bring about satisfactory learning outcomes (interest and retention) that could guarantee enduring academic gains/outcomes on the part of media resources and services in information work 200 level undergraduate students, which will go beyond examination and be applicable in the information society.

Objectives of the Study

Specifically, the study objectives are to:

1. examine the effect of Microsoft PowerPoint Presentation on Library and Information Science undergraduate students' academic interest in Nigerian Universities;
2. determine the effect of Microsoft PowerPoint Presentation on Library and Information Science undergraduate students' academic retention in Nigerian Universities;

Research Questions

The following research questions to be answered in this study are as follows:

1. What is the effect of Microsoft PowerPoint Presentation on LIS students' academic interest in Nigerian Universities?
2. Is there any significant effect of Microsoft PowerPoint Presentation on LIS students' academic retention in Nigerian Universities?

Null Hypotheses

The following null hypotheses are postulated to be tested at $P < 0.05$ level of significance.

H₀₁ There is no significant effect of Microsoft PowerPoint instructional strategies on the interest of undergraduate students in Nigerian Universities.

H₀₂ There is no significant effect of Microsoft PowerPoint instructional strategies on the retention ability of undergraduate students in Nigerian Universities.

Methodology

The research design adopted for this study was quasi experiment design. It was a pre-test, post-test, non-randomized experimental and control groups. The experimental group was treated using Microsoft PowerPoint presentation (MSPPP) while the control group was treated with Conventional/traditional using same course outline. This consisted of six (6) topics taught within six (6) weeks. The population of study constituted of 1018 undergraduate students of library and information science (LIS) offering LIS as a course in five (5) Universities in North-Western States Nigeria.

Purposive sampling and non-randomized techniques. Where two universities offering Library and Information Science at 200 level, consisting 307 undergraduate students were used in this study because it had a required strength of students needed for study and facility to use Microsoft PowerPoint Presentation. Undergraduate students were placed basis on their scores in pre-test through random assignment. Group A treated as experimental and B as control group.

Two Instruments were used by the researcher for data collection. These instruments include; Treatment and Test Instrument MSPPP were adapted vs a test (LISAI & LISAR) consists of fifty multiple choice questions based on the six (6) selected Topics of media resources and services in information works, a 200-level course outline and (LISAIQ) which were designed by researcher. All the items were tested on the undergraduates' students in the two universities within eight (8) weeks.

To ensure validity of the instruments, computer scientist and programming experts, Instructional Technology specialists, measurement experts and Library and Information Science specialists from the Universities participated in this exercise in order to suite LIS undergraduate students in the teaching and learning process, it was modified based on the recommendations. This instrument was trial tested at two weeks' interval at one of the Universities, (which was not part of study sample), for the purpose of this study. This was done in order to test reliability of the instrument. All the undergraduate students in the class were used for the pilot study. However, a reliability coefficient of 0.92 was obtained using Kuder-Richardson (KR - 21) formula. While the reliability coefficient on interest questionnaire obtained 0.89 using Cronbach Alpha. This value indicated that, the test instrument LISART and LISIQ were reliable to be used for this study.

Data Analysis and Results

Data collected for this study was analyzed at two levels, viz descriptive and inferential levels. Using t-test and non-parametric test of Man Whitney statistic. The results of the analysis provided answers to the two-research questions and null hypotheses posed as presented in tables i, ii, iii and iv below:

Research Question 1: What is the effect of PowerPoint instructional strategy on the interest level of undergraduate students?

Table i: Non-Parametric test on difference in interest level of students exposed to while Power Point (Experimental 3) and these exposed to lecture (control) of undergraduate students

Ranks			Mean Rank	Sum of Ranks	Remarks
Interest	Exp (Microsoft PowerPoint instruction)	196	204.73	40128.00	PowerPoint is highly effective than the lecture/classroom strategy
	Control	111	64.41	7150.00	
	Total	307			

Result of the Non parametric test revealed that there much difference in the interest level of students exposed to PowerPoint (Experimental) and these exposed to lecture (control) of undergraduate students. Their calculated mean interest levels are 204.73 and 64341 by students exposed to Microsoft PowerPoint (Experimental) and these exposed to lecture (control) respectively. In comparison therefore the interest levels of students exposed to Microsoft PowerPoint is significantly higher than the interest level of those in control.

Question Two: What is the effect of Power Point Instructional strategy on the retention ability of undergraduate students?

Table ii: Descriptive Statistics on difference in retention ability of students exposed to Power Point (Experimental) and these exposed to lecture (control) of undergraduate students

Variable	Study groups	N	Mean	STD	Mean diff	Remarks
Retention	Exp Microsoft PowerPoint	196	63.0204	11.91464	14.479	PowerPoint increases retention ability than lecture/classroom strategy on students
	Control	111	48.5405	8.93999		

The descriptive statistics above showed that difference exist in retention ability of students exposed to Microsoft PowerPoint (Experimental) and these exposed to lecture (control) of undergraduate students. The descriptive statistics showed that their computed mean retention ability levels are 63.0204 and 48.5405 by students exposed to Microsoft PowerPoint (Experimental) and these exposed to lecture (control) respectively with a mean difference of 14.79 in favor of those exposed to Microsoft PowerPoint instructional strategy. This shows that those students introduced to Microsoft PowerPoint instructional strategy have significantly increased mean retention ability than their counterparts in the control group.

Hypothesis One: There is no significant effect of Microsoft PowerPoint instructional strategy on the interest level of undergraduate students among Library and Information Science undergraduate students in Nigerian universities.

This hypothesis was tested using Man Whitney (U) test as follows:

Table iii: Significant interest level of students exposed to which Microsoft PowerPoint (Experimental) and these exposed to lecture (control) of undergraduate students

	Study Groups	N	Mean Rank	Sum of Ranks	Mann-Whitney U	Z	P
Interest	Exp (Microsoft PowerPoint instruction)	196	204.73	40128.00	934.000	13.313	0.000
	Control	111	64.41	7150.00			
	Total	307					

$P=0.000 < 0.05$, Mann-Whitney $U=934.00 > z = 13.313$

Result of the Non parametric test of Man Whitney test revealed that there was a significant difference in the interest level of students exposed to Microsoft PowerPoint (Experimental) and those exposed to lecture (control) of undergraduate students. The reason being that the calculate p value of 0.000 was found to be lower than the 0.05 alpha level of significance and the computed Man Whitney value of 934.00 is greater than the Z scores of 13.313. Their calculated mean interest levels are 204.73 and 64341 by students exposed to Microsoft PowerPoint (Experimental) and those exposed to lecture (control) respectively. In comparison, therefore, the interest levels of students exposed to Microsoft PowerPoint was significantly higher than the interest level of those in control. Therefore, the null hypothesis which state that there was no significant effect of Microsoft PowerPoint instructional strategy on the interest level of undergraduate students, was hereby rejected.

Hypothesis Two: There is no significant effect of Microsoft PowerPoint instructional strategy on the retention ability of undergraduate students among Library and Information Science undergraduate students in Nigerian universities

To test this hypothesis t-test was used as follows:

Table iv: Significant difference exist in retention ability of students exposed to Microsoft PowerPoint Instructional Strategy.

Variable	Study groups	N	Mean	STD	Mean diff	df	t computed	P
Retention	Exp Microsoft PowerPoint	196	63.0204	11.91464				
	Control	111	48.5405	8.93999	14.479	305	11.147	0.000

$P = 0.000 < 0.05$, $t_{computed} = 11.147 > 1.96$ at $df 305$

The independent t test statistics showed significant difference exist in retention ability of students exposed to Microsoft PowerPoint (Experimental) and those exposed to lecture (control) of undergraduate students. This was because the calculated p value of 0.000 was lower than the 0.05 alpha level of significance and the computed t value of 11.147 was greater than the 1.96 t critical value at df 305. Their descriptive statistics showed that their computed mean retention ability levels are 63.0204 and 48.5405 by students exposed to Microsoft PowerPoint (Experimental) and those exposed to lecture (control) respectively with a mean difference of 14.79 in favor of those exposed to Microsoft PowerPoint strategy This shows that those students introduced to Microsoft PowerPoint instructional strategy have significantly increased mean retention ability than their counterparts in the control group Therefore, the null hypothesis which states that there was no significant effect of Microsoft PowerPoint instructional strategy on the retention ability of undergraduate students was hereby rejected

Discussions

Based on the result of the non-parametric test of research question i, it has revealed that, the calculated mean interest level was 204.73 and 64341 by students exposed to Microsoft PowerPoint (experiment) and those exposed to lecture (control) group. This study was in agreement with Warschauer & Matuchniak, (2016) and Yüzüncü, (2011), the effect of Microsoft PowerPoint and Traditional Lectures on Students' Achievement and interest in Physics. The study concluded by supporting the premise that the intelligent use of PPPs in physics instruction is capable of increasing the students' academic achievement and interest. Therefore, the null hypothesis which state that there was no significant effect of Microsoft PowerPoint instructional strategy on the interest level of undergraduate students, was hereby rejected.

Findings of research questions ii, showed that the computed mean retention ability of Library and Information Science undergraduate students was 63.0204 and 48.5405 by students exposed to Microsoft PowerPoint (experiment) and those exposed to lecture (control) respectively with a mean difference of 14.79 for those exposed to Microsoft PowerPoint instructional strategy. The study shows significant increase in mean retention ability that those in control group as agreed with efficient as Microsoft PowerPoint instructional strategies have great impact on student's retention. Supporting the studies of Bandyopadhyay, (2018) and Van-Dat & Tran (2018) investigations on the effects of information retention from Microsoft PowerPoint and traditional lectures on student performance. Study results showed that digital (Microsoft PowerPoint) stories have a positive effect on the retention in the experimental group. Therefore, the null hypothesis which states that there was no significant effect of Microsoft PowerPoint instructional strategy on the retention ability of undergraduate students was hereby rejected.

Conclusion

Based on the findings of this study, it was concluded that, Microsoft PowerPoint lecture/classroom presentation teaching and learning strategy in university education have significant effect on the academic interest mean Rank and retention ability on library and information science undergraduate students, having the same level of positive effect on undergraduate students' academic outcome. PowerPoint had $P = 0.000$ on Interest and $P = 0.000$ on retention. This implies that, the experimental strategy of PowerPoint on undergraduate students' academic interest and retention was retained.

Recommendations

1. Lectures and talks should be organized for undergraduate students to enable them have the knowledge and confidence in handling modern computers facilities like Microsoft PowerPoint presentation as it boosts the undergraduate students' academic interest in university education.
2. All Nigerian universities education should make available modern computer laboratories with Microsoft PowerPoint presentation facilities for their undergraduate students' as it has positive effect on their retention ability.
3. Instructional Technology specialist should make plans on how to expose all university lecturers to training, workshops and seminars on the effective and efficient use of technology pedagogies (Microsoft PowerPoint Presentation) for lecture/classroom instructions in universities education.

REFERENCES

- Al-Hariri, T. M. & Al-Hattami, A. A. (2017). Impact of students' use of technology on their learning achievements in physiology courses at the University of Dammam. *Journal of Taibah University Medical Sciences*. Vol. 12, (1),
- Anderson R (2017). Print on the margins. *Library Journal* 136: 38–39. Google Scholar Babbitt Bray G, Pascarella ET, Pierson CT (2004) Postsecondary education and some dimensions of literacy development: An exploration of longitudinal evidence. *Reading Research Quarterly* 39(3): 306–330. Google Scholar Crossref
- Bala, B., (2016). *Evaluation of the use of library course in general studies curriculum for colleges of education in Nigeria*. PhD Thesis, University of Ilorin, Ilorin, Nigeria.
- Bauer, J., & Kenton, J. (2017). Toward technology integration in the schools: Why it isn't happening, *Journal of Technology and Teacher Education*, vol. 13, no. 4.
- Bandyopadhyay, A. (2018). *Technology integration before student outcomes: factors affecting teacher adoption of technology in India*. Department of Counseling, Higher Education and Special Education.
- Bindu, C. N (2019). Barriers to ICT Integration in teaching: A case study of teachers in Kerala. Available at: http://educationindiajournal.org/home_art_avi.php?path=&id=351/ (accessed 25 August 2020). Google Scholar
- Boor, M. C. H. (2022). Effects of technology integration pedagogies on academic achievement, interest and retention of library and information science undergraduate students in Nigerian universities. PhD Thesis, Ahmadu Bello University Zaria, Nigeria.
- Chigona, A. (2018). Pedagogical shift in the twenty-first century: Preparing teachers to teach with new technologies. *Africa Education Review* 12(3): 478–492. Google Scholar
- Fletcher, L. C., (2019) What Is the Impact of PowerPoint Lectures on Learning? A Brief Review of Research Faculty Development Center Hagerstown Community College.
- Jung, I. (2019). ICT-Pedagogy Integration in teacher training: application cases worldwide. *Educational Technology and Society*, Vol. 8, No. 2
- Kaur, (2019). *New Technology and Education: Contemporary Issues in Education Studies*. Available at: www.ncert.nic.in/publication/journals/pdf_files/ijet/jan19/ijet_jan19.pdf (accessed 25 August 2020). Google Scholar
- Lin, M-C, Wang, P-Y, Lin, I-C (2019) Pedagogy technology: A two-dimensional model for teachers' ICT integration. *British Journal of Educational Technology* 43(1): 97–108. Google Scholar | Crossref

- Northwest Evaluation, Association. (2016). Measures of academic progress [PDF]. Retrieved from
EBSCOhost, <http://search.ebscohost.com/login.aspx?direct=true&db=mmt&AN=test.3159&site=ehost-live&scope=site>.
- Nouri, D., & Douglas Clinton, D. (2018), Effects of gender, mental imagery, and PowerPoint (Tm) presentation on student attitudes, in Bill N. Schwartz, J. Edward Ketz (ed.) *Advances in Accounting Education: Teaching and Curriculum Innovations. Vol.7.*
- Pao-NanChou, Chi-ChengChang & Pei-FenLu, (2017). Prezi versus PowerPoint: The effects of varied digital presentation tools on students' learning performance. Computers and Education, Elsevier. Vol. 91.
- Tufte E. (2017). PowerPoint Is Evil: Power corrupts. PowerPoint Corrupts Absolutely. Wired Magazine.
- Van-Dat & Tran (2018). The effects of PowerPoint learning on the academic achievement and knowledge retention. *International Journal of Higher Education Vol. 3, No. 2.*
- Warschauer, M., & Matuchniak, T. (2016). New technology and digital worlds: analyzing evidence of equity in access, use and outcomes. *Review of Research in Education. 34 (1).*
- Westbrook J, Durrani N, Brown R, Orr D, Pryor J, Boddy, J., & Salvi F (2017) Pedagogy, curriculum, teaching practices and teacher education in developing countries. Final Report. Education Rigorous Literature Review. Department for International Development.
- Yüzüncü, Y. (2019) The Effect of PowerPoint and Traditional Lectures on Students' Achievement and interest in Physics. *Naki ERDEMİR. Van-TURKEY. 8 (3).*
- Zdaniuk, A., Jamie, A., Gruman, & Scott A. C., (2017). PowerPoint slide provision and student performance: the moderating roles of self-efficacy and gender. *Journal of Further and Higher Education. 6 (9).*

PERCEPTION OF ONLINE-LEARNING AMONG STUDENTS OF HIGHER EDUCATIONAL INSTITUTIONS IN THE ERA OF COVID-19 PANDEMIC IN OYO STATE, NIGERIA

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Abstract

The discontinuity of academic activities in higher institutions in Nigeria as a result of covid-19 pandemic informed the introduction of online learning as alternative way of imparting knowledge to the learners. This study investigated perception of online-learning among students of higher educational institutions in the Era of Covid-19 pandemic in Oyo State, Nigeria. Descriptive research design was adopted for this study. The population for the study comprised of all undergraduates in higher institutions in Oyo State, Nigeria. One hundred and fifty (150) respondents drawn from the selected higher institutions represented the sample for the study. One research question was raised and one hypothesis formulated for the study at 0.05 level of significance. Research question raised was subjected to frequency count and simple percentage while t-test was used to analyze hypothesis. The instrument titled 'Students Perception of Online Learning Questionnaire' (SPOLQ) was used to gather relevant data for the study. The study revealed that respondents perceived online learning as more beneficial for social interaction than academic purposes. Also, male and female undergraduates differ in their perception of online learning in the era of covid-19 pandemic. The study concludes that online learning for undergraduates is indispensable especially at this crucial period of covid-19 pandemic. Recommendations made include that efforts should be geared toward encouraging undergraduates for embracing online learning for academic purposes rather than using it for social interaction while female undergraduates should be encouraged more on the use of online learning.

Keywords: Higher Institutions, Online Learning, Covid-19 Pandemic

Introduction

Higher education sector in Nigeria comprised of universities, polytechnic, colleges of education, monotechnic, and those offering correspondence courses. The invaluable roles and contributions of higher education to the development of an individual and the society are enormous. The goals of Higher education according to NPE (2013) include to:

- (a) contribute to national development through high level relevant manpower training;
- (b) develop and inculcate proper values for the survival of the individual and society;
- (c) develop the intellectual capacity of individuals to understand and appreciate their local and external environment;
- (d) acquire both physical and intellectual skills which will enable individuals to be self-reliant and useful members of the society
- (e) promote and encourage scholarship and community services;
- (f) forge and cement national unity; and
- (g) promote national and international understandings and interaction.

Higher education institutions were established in Nigeria to train crop of students in various discipline to tackle social, economic and political challenges, especially with the power of

research being focused on areas that will promote human development and solve existential problems (Odim, Annastashia & Solomon, 2018). Asiyai (2013) argued that higher education is fundamental to all developing countries if they are to prosper in a world economy where knowledge has become a vital area of advantage.

Over the years, a lot of factors responsible for cessation of academic activities in Nigeria's higher institutions. Among the notable reasons are incessant strike actions by academic staff while pressing their home demands (especially in the areas of infrastructural deficit, emolument, etc), student unrest such as high levies of tuition fees, among others in the institutions. Recently, another form of discontinuity becomes known in education industries globally. This stoppage of the entire education system was caused by a novel Coronavirus called Covid 19. Globally, as a result of this ugly development, all categories of education sector were totally lockdown to prevent spreading of this pandemic.

The COVID-19 pandemic has greatly hindered teaching and learning in many ways in Nigerians higher institutions. The usual physical lectures had to be put on hold to ensure the safety of students, lecturers, and other staff in the institutions. Data released by Nigeria Centre for Disease Control (2021), the total number of Covid-19 confirmed cases in Nigeria as at May 24, 2021 is 166,019, 156,476 discharged and 2,067 deaths. The adverse effect of this heinous disease led to total disruption of academic activities in primary, secondary, colleges, polytechnic and universities in Nigeria. As part of the COVID-19 safety measures, learning activities in Nigerian tertiary institutions were placed on a compulsory lockdown. According to Obododike and Okekeokosisi (2020), the situation has left many educators and students in an unfavourable condition as some of the institutions were preparing for examination, admitting new set of students, beginning of new academic semester and so on.

The closure of the academic institutions has negative effect on the students, parents and the nation at large. Additionally, UNESCO (2020) reported that the closure of higher institutions has affected over 91 percent of the students' population in the world and that 23.8 million students may drop out or not be able to secure admission to schools in the 2021 academic calendar. As released by Emergency Working Group on report of education shows that about 46 million Nigerian students are affected by the schools' closure (Oyediran, Omoare, Owoyemi, Adejobi, & Fasasi, 2020).

In order to reduce the effect of lockdown, several higher institutions had to employ another approach for the continuity of teaching learning activities for students. Globally, every institution is looking for a better way of coping with academic changes as a result of this unwholesome development. This situation led to adoption of online learning by the Federal Government of Nigeria as a method of teaching during the COVID-19 pandemic.

Obododike and Okekeokosisi (2020) stress that a lot of platforms have been adopted by tertiary institutions for delivery of instruction and these include: Zoom, Microsoft teams, google hangout (meet), skype, bamboo learning, google classroom, docebo, WIZIQ, Adobe captivate, elucidat, Blackboard learn amongst others. Kamba (2009) stressed that one of the advantages of online-learning is that it is less expensive to deliver. Online-learning is self-paced, provides consistent content, faster and works anywhere and at any time for learners.

Gender issue generally and particularly in educational industry has become an issue not to be neglected but take cognizance of in order to make scholarly pronouncements that will clear sentiments attached to its outcry (Shittu, 2019). According to Zhnoggen (2020) findings

regarding gender differences in online learning outcomes tend to be inconsistent and even paradoxical. The effect of gender on online learning outcomes is controversial. Alghamdi, Karpinski, Lepp and Barkley (2020) found out that females had stronger self-regulation than males, which also led to their significantly more positive online learning outcomes than males.

Several studies had been carried out in the area of online learning all over the world, but little research were done with respect to higher institutions undergraduates' perception of online learning in the era of covid-19. Therefore, this study investigated perception of online-learning among students of higher educational institutions in the Era of Covid-19 pandemic in Oyo State, Nigeria.

Statement of the Problem

The COVID-19 pandemic has greatly hindered teaching and learning activities in Nigerians higher institutions. The usual physical lectures had to be put on hold to ensure the safety of students, lecturers, and other staff in the institutions. As released by Nigeria Centre for Disease Control (2021), the total number of Covid-19 confirmed cases in Nigeria as at May 24, 2021 is 166,019, 156,476 discharged and 2,067 deaths. The adverse influence of this global pandemic informed the total lockdown of the country which resulted into total disruption and cessation of academic activities in primary, secondary, colleges, polytechnic and universities in Nigeria. In order to reduce the effect of this unwholesome development, several higher institutions had to employ another approach for the continuity of teaching-learning for students. The current situation allows higher institutions to embrace online learning as method of teaching during the COVID-19 pandemic in Nigeria. Although, several studies had been carried out with regard to online learning globally, but little research were done, especially, in the area of higher institutions undergraduates' perception of online learning in the era of covid-19. Therefore, this study investigated perception of online-learning among students of higher educational institutions in the Era of Covid-19 Pandemic in Oyo State, Nigeria.

Literature Review

According to Olutola and Olatoye (2015) online learning refers to the use of modern technologies such as computers, digital technology, networked digital devices (e.g. the internet) and associated software and course ware. Arkorful and Abaidoo (2014) see online learning as the use of information and communication technologies so as to access online learning/teaching resources. Anenne, Imam & Odumuh, (2014) define online learning as the process by which people acquire skills or knowledge for the purpose of enhancing their performance through the internet or intranet and multimedia which leads to reinforced learning by means of video, audio, quizzes and other forms of interaction.

The contribution of online learning in the citadels of learning are enormous. Eke, (2011) opines that regardless of the educational level or stage online learning can be adopted, used or applied in the education for effective teaching and learning. Algahtani (2011); Arkorful and Abaidoo (2014) affirm that online learning is a learner-controlled, self-paced education environment where the learner has authority over the learning environment; thereby allowing learners to work at their pace, convenience. Also, according to Smeldey (2010) adoption of online learning provides the institutions and their students the much flexibility of time and place of delivery or receipt of according to learning information.

Despite the contribution of online learning to the development of education globally, unfortunately, the online-learning in Nigeria has not developed due to a number of factors which are as observed ranges from mass unawareness, congestion or heavy use of websites, low computer literacy level and cost (Klein & Ware, 2003; Yusuf, Afolabi & Loto, 2013; Anenne, Imam & Odumuh, 2014; Apagu & Bala, 2015; Aworanti, 2016). These factors according them were identified as critical in affecting the acceptability of online-learning by students and lecturers. Smart and Cappel (2006) opine that other potential problems of online-learning include: a sense of learner isolation, learner frustration, anxiety, and confusion, higher student attrition rates.

Objectives of the study

The general objective of this study is to investigate perception of online-learning among students of higher institutions in the era of covid-19 pandemic in Oyo State, Nigeria in Oyo State, Nigeria. Specifically, this study sought to:

1. investigate perception of online learning among students of higher institutions in the era of covid-19 pandemic in Oyo State, Nigeria;
2. examine the gender difference in perception of online learning among students of higher institutions in the era of covid-19 pandemic in Oyo State, Nigeria.

Research Question

1. What is the perception of online learning among students of higher institutions in the era of covid-19 pandemic in Oyo State, Nigeria?

Hypothesis

1. There is no significant gender difference in perception of online learning among students of higher institutions in the era of covid-19 pandemic in Oyo State, Nigeria.

Methodology

The study adopted a descriptive survey research design. This offers the researcher the opportunity to collect data without manipulating any of the variables of interest in the study.

The population for the study consisted of all students of higher educational institutions in Oyo State, Nigeria. The sample for this study consisted of one hundred and fifty (150) respondents. Three higher institutions were randomly selected (1 University, 1 Polytechnic and 1 College of Education) for the study. Proportionate sampling method was used to select participants from the three selected higher institutions used for the study. The instrument titled 'Students Perception of Online Learning Questionnaire' (SPOLQ) was used to gather relevant data for the study. The instrument contains two sections. Section A deals with the personal information of the respondents (gender and name of institution) while section B comprised of information on the subject of the study. The face validity and content validity of the instrument were accomplished through experts' opinion. The experts in measurement and evaluation ensured the clarity of items in the questionnaire, the appropriateness of the language and expressions used and the appropriateness of the instructions that would help the respondents to respond to the instruments accordingly. The scoring of the instrument was based on 4 -point Likert rating scales ranging from strongly agree to strongly disagree. To establish the reliability of the instrument, a test-retest with two weeks interval was carried out. The instrument was administered on students which were among the population but outside the sample for the study. Cronbach's Alpha method was used to analyse the data collected which yielded 0.82 ($r = 0.82$). Research question raised was answered using

descriptive statistics of frequency count and simple percentage while the hypothesis was tested using t-test statistical tool.

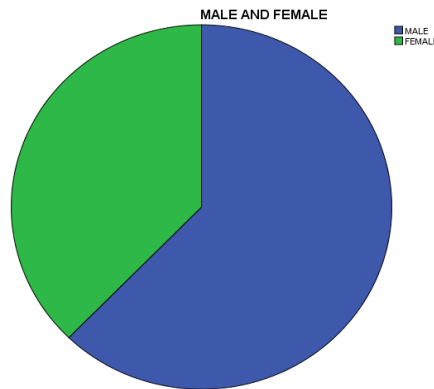
Results

Table 1: Gender Distribution of Respondents

Gender	Frequency	Percentage (%)
Male	80	53.3
Female	70	46.7
Total	150	100.0

Source: Researcher's work, 2021

Table 1 showed that majority of the respondents 80 (53.3%) were male while 70 (46.7%) were female. The graphical representation is presented below.



Research Question 1: What is the perception of online learning among students of higher institutions in the era of covid-19 pandemic in Oyo State, Nigeria?

Table 3: Analysis of perception of online learning among students of higher institutions in the era of Covid-19 Pandemic

S/N	ITEMS	SA	%	A	%	D	%	SD	%
1.	Easy to do work at my own pace	25	16.7	15	10	30	20	80	53.33
2.	Better Interaction between students and Lecturers	22	14.67	14	9.33	31	20.67	83	55.33
3.	Prefer Online learning to physical classroom method	11	7.33	10	6.67	36	24	93	62
4.	Easy to use and more beneficial for social interaction than academic purposes	5	3.33	6	4	12	8	127	84.67
5.	Students assimilate better during online learning than physical classroom learning	32	21.33	35	23.33	40	26.67	43	28.67

Source: Researcher's work, 2021

In the table 3 above, it is indicated that responses of students on item 1 revealed that 53.33 % of the respondent, strongly disagreed that online learning is easy to do work at their own pace. 55.33 of the respondents strongly disagreed that online learning brings about better interaction between students and the lecturers. Also, 62% of the participants preferred Online learning to physical classroom method. It is indicated that 84.67% of the respondents believe that online learning is more beneficial and easy to use for social interaction than academic purposes while 28.67% of the participants strongly disagree that students assimilate better during online learning than physical classroom learning. In conclusion, it is evident from the findings that higher institutions undergraduates perceived that online learning is more beneficial for social interaction than academic purposes.

Hypothesis 1: There is no significant gender difference in perception of online learning among students of higher institutions in the era of covid-19 pandemic in Oyo State, Nigeria.

Table 4: Analysis of t-test comparing Gender differences in students' perception of online learning among students of higher institutions in the era of covid-19

Gender	N	X	Std. Deviation	DF	t-value calculated	t critical
Male	80	63.21	6.54	148	2.03	1.96
Female	70	65.35	6.24			

P < 0.05

Source: Researcher's work, 2021

The results in table 4 above indicated that the calculated t-test value (2.03) was greater than the t-critical value of 1.96 at 148 degree of freedom. The hypothesis which stated that there is no significant gender difference in perception of online learning among students of higher institutions in the era of covid-19 pandemic in Oyo State, Nigeria was by this finding rejected (2.03, $p < 0.05$). In effect, higher institutions male and female undergraduates differ in their perception of online learning in the era of covid-19 pandemic.

Discussions

On the perception of online learning among students of higher institutions in the era of covid-19 pandemic, the result revealed that majority of the respondents believed that they using online learning is more beneficial and easy to use for social interaction purposes than academic exercise. The result is in agreement with the findings of Onuoha and Saheed (2011) who investigated perceived influence of online social networks on academic performance: A study of undergraduates in selected universities in Ogun State, Nigeria and found out that students preferred using online social network for social interaction benefit than academic purposes.

On hypothesis which states that there is no gender difference in perception of online learning among students of higher institutions in the era of covid-19 pandemic in Oyo State, Nigeria. The findings revealed that there was significant difference in perception of online learning among students of higher institutions in the era of covid-19 pandemic. The result is in agreement with the study carried out by Zhonggen (2021) on effects of gender, educational level and personality on online learning outcomes during the covid-19 pandemic. The study revealed there are effects of educational levels, gender, and personality traits on online learning outcomes.

Conclusions

The study revealed that students of higher institutions perceived online learning as more beneficial and use for social interaction than academic purposes. Also, it is indicated that gender difference occurs with regard to online learning. The survival of higher institutions in the 21st century will increasingly rely on online learning. Online learning for students of higher institutions is indispensable especially at this crucial period of covid-19 pandemic.

Recommendations

Based on the above, the following recommendations were made:

The relevant authorities concerned should sensitize higher institutions students on the importance attached to using online learning, and encourage them to use it for academic purposes rather than social interaction. Efforts should be geared toward ensuring that online learning infrastructure deficiencies are addressed. This could be achieved by making it available all the needed facilities such as functioning internet connectivity and so on. Higher institutions undergraduates should be invigorated to see the benefits associated with online learning, as there is global trend on the usage of online learning. Female undergraduates should be encouraged to embrace more on the use of online learning.

REFERENCES

- Algahtani, A. F. (2011). Evaluating the effectiveness of the E-learning experience in some Universities in Saudi Arabia from male students perceptions. *Unpublished Thesis*. Durban University.
- Alghamdi, A., Karpinski, A. C., Lepp, A., & Barkley, J. (2020). Online and face-to-face classroom multitasking and academic performance: Moderated mediation with self-efficacy for self-regulated learning and gender. *Computers in Human Behavior*, 102, 214–222. <https://doi.org/10.1016/j.chb.2019.08.018>
- Anenne, J. N. Imam, H & Odumuh, T. (2014). Problem and prospect e-learning in Nigerian Universities. *International Journal of Technology and Inclusive Education*.3 (2).
- Apagu, V. V & Bala, A. W. (2015). Availability and utilization of ict facilities for teaching and learning of vocational and technical education in Yobe State Technical Colleges. *American Journal of Engineering Research (AJER)* 4(2). Retrieved from www.ajer.org.
- Arkorful, V. & Abaidoo, N. (2014). The role of E-learning, the advantages and disadvantages of its adoption in higher education. *International Journal of Education and Research* 2(12), 397-410. Retrieved on 15/10/2021 from www.researchgate.net
- Asiyai, R. I. (2013). Challenges of quality in higher education in Nigeria in the 21st century. *International Journal of Educational Planning & Administration*. 3(2). Retrieved from <http://www.ripublication.com/ijepa.htm>
- Aworanti, O. A. (2016). Information and Communications Technology (ICT) in Nigerian educational assessment system-emerging challenges. *Universal Journal of Educational Research* 4(6), 1351-1356. Retrieved on 15/09/2021 from www.hrpub.org
- Eke, H. N. (2011). Modeling LIS students' intention to adapt e-learning: A Case from University of Nigeria Nsukka, *Library Philosophy*.
- Federal Republic of Nigeria (2013). *National policy on education (6th Edition)*. NERDC: Lagos.
- Kamba, M. A. (2009). Challenges and benefits of implementing e-learning in Nigerian universities. An empirical study. *International Journal of Emerging technologies in Learning*. 4 (1). Retrieved from www.researchgate.net
- Klein, D. & Ware, M. (2003). E-learning: New opportunities in continuing professional development. *Learned Publishing* 16(1).34-36.
- Nigeria Centre for Disease Control (2021). Coronavirous (Covid-19) information. Nigeria.
- Obododike, M. P & Okekeokosisi, J. B. O. C. (2020). Challenges of implementing e-learning in Nigeria educational system in the Covid-19 pandemic era. *Social Sciences and Education Research Review*.7 (2). Retrieved from www.seerr.ro

- Odim, O. O., Annastashia I. A. & Solomon, A. A. (2018). Effect of Strikes on Management and Planning of Educational Activities in Nigerian Universities. *Global Journal of Educational Research*, 17, 1-8.
- Olutola, A. T. & Olatoye, O. O. (2015). Challenges of e-learning technologies in Nigerian university education. *Journal of Educational and Social Research*. 5 (1). Retrieved from www.researchgate.net
- Onuoha, U. D. & Saheed, F. O. (2011). perceived influence of online social networks on academic performance: A study of undergraduates in selected universities in Ogun State, Nigeria. *African Journals Online (AJOR)*. 11 (1&2). Retrieved from www.ajor.info
- Oyediran, W. O., Omoare, A. M, Owoyemi, M. A, Adejobi, A. O. & Fasasi, R. B. (2020). Prospects and limitation of e-learning application in private tertiary institutions amidst covid-19 lockdown in Nigeria. *Heliyon*. 6 (11). Retrieved from www.sciencedirect.com
- Shittu, R. M. (2019). perceived usefulness, ease of use and attitude towards ict usage among business education lecturers in colleges of education in South-west, Nigeria. *Unpublished M.ed thesis*. Olabisi Onabanjo University, Ogun State.
- Smart, K. L. & Cappel, J. J (2006). Students' perceptions of online learning: A comparative Study. *Journal of Information Technology Education*.5. Retrieved from www.researchgate.net
- Smeldey, J. K. (2010). Modelling the impact of knowledge management using technologies. *OR Insight* 23, 233-250.
- Tamrat, W. & Teferra, D. (2020). COVID-19 poses a serious threat to higher education. <https://en.unesco.org/covid19/educationresponse>.
- UNESCO (2020). COVID-19 *Educational Disruption and Response*. Retrieved from University World News. <https://www.universityworldnews.com/post.php?story=20200409103755715>
- Yusuf, M. A., Afolabi, F. O & Loto, A. B. (2013). Appraising the role of information communication technology (ICT) as a change agent for higher education in Nigeria. *International Journal of Educational Administration and Policy Studies*. Retrieved from <http://www.academicjournals.org>
- Zhonggen, Y. (2021). Effect of gender, educational level and personality on online learning outcomes during the covid-19 pandemic. *International Journal of Educational Technology in higher education*. Retrieved from www.educationaltechnologyjournal.springeropen.com

APPROPRIATE USE OF RELEVANT APPROACHES AND STRATEGIES AS MECHANISM FOR ADDRESSING READING CHALLENGES AMONG STUDENTS IN BASIC EDUCATION IN NIGERIA

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Abstract

Ability to read is a skill that learners are expected to acquire at the early basic education level. At first, learners attend schools to learn to read and later they used the skills of reading to learn other subjects. Ability to read is not instinctively acquired. Learners must learn it through processes. Therefore, all stakeholders must contribute cohesively to ensure reading success of learners in Nigeria. Thus, the issue of reading has recently become an area of concern by different authorities, which motivated some organizations to make policy related effort that can support reading at various levels of education in the country. The problems of reading in Nigeria are multi-faceted in the policy, teacher training, instructional materials, parental support and the learners themselves (RARA, 2015). The main objectives of this paper are to identify teacher related factors especially involving approaches used in teaching reading. The paper considers use of guided reading, sight words, linguistic and phonics approaches in teaching reading. Moreover, the paper also discusses the strategies that teachers should employ to improve reading outcome which include scaffolding method, provoking questions, basal reading, collaborative learning and gamification that can motivate the student learning interest in those grades. It is imperative that teacher explore all the approaches and strategies to make learners know how to read. It has been recommended that publishers should pay attention in developing the books that are in line with the international standards. Experts in the field of information technology are advised to develop applications that are locally inclined to fasten ability to read at grade classes. Teachers are to use multiple approaches and strategies to improve learning performance in their classes.

Key words: *Reading Challenges, Approaches, Strategies, Basic Education, Classes*

Introduction

Reading is a key to successful learning in school (Inuwa, 2021). Successful readers are prosperous learners and stand the chances for better opportunities while poor readers are at the verge of having learning disability as they progress (Inuwa 2018, Lori et al 2008). As observed, the habit of reading in Nigerian schools appeared to be declining when we observe the performance of learners in the secondary schools. Learning to read supposed to be the focus of the initial basic literacy or primary school activities starting from nursery (kindergarten) classes. Learners of basic education classes comprising primary one (1) to three (3) should be guided on how to decode sounds and understand vocabulary in the context of their language or mother tongue (Becton, 2021). This may not exclude the fact that learners at this stage may apply the beginning skills of reading acquired and decode symbols in other language that may not be familiar to them. Learners at the beginning of basic literacy or primary one through primary three are expected to build fluency skills progressively with good instructions and practices. The actual reading to learn on the other hand begins in primary four or post basic classes (Becton, 2021). At this stage, learners continue to build other skills as a reading of their reading abilities (Becton, 2021). Learners are expected to read for information or comprehension at the end of basic literacy or in primary four if they

have received good instructions. However, good instructions denote the use of appropriate approaches that can nurture effective reading ability. Moreover, the application of sounds and effective instructional strategies is necessary in fostering learners' skills to read. In many instances, the teacher has to use multiple strategies to make the learners reading fluently (RARA, 2015). This paper will identify various reading approaches and strategies as well as their appropriate usage in order to address reading challenges among students in basic education.

Concept of Reading

Lockwood (2008), defined reading as cognitive process that involves decoding symbols to arrive at meaning. This means that reading entails an active process of constructing meanings of words with a purpose of helping the readers to receive direct information towards a goal and focus attention. Reading was also defined as a thinking process which allows the reader to use what he or she may already know, also called prior knowledge (Goodman, 2000). In this definition, reading does not only stopped at cognitive process, it entails the reader to use prior information which supports vocabulary knowledge and augment fluency skills.

Approaches to Reading Instructions

An approach to teaching reading could simply mean a way of looking at teaching and learning processes underlying the use of language, application of strategies and resources necessary for learning. The following include selected approaches that can be used to better the reading instructions in basic education classes:

1. Guided Reading Instructional Approach: This is an instructional approach that comprises a teacher and small group of learners who are reading at the same level of text and demonstrate similar reading behaviors. Using this approach, the text can be developed easily for the students to read and develop fluency skills in accordance with their levels. An instructor can identify appropriate strategies that help learners grasp the content. According to Jeanne (2002), guided reading as part of literacy education can be used in conjunction with the other approaches to teaching reading. It may include shared reading, reading aloud and independent reading. The role of the teacher during the guided reading is to provide support to the learners in selecting the book of their choice during reading activities in order to ensure everyone takes parts and the class is managed effectively. Jeanne (2002) has provided the following process of organizing guided reading in a class:

- a. The teacher will organize the learners in a group according to their learning need and ensure that everyone in the group participates during reading
- b. Teacher provides support to learners during the selection of the appropriate text for a group or individual to read
- c. Guide the students to know why they are reading the text they have selected. Teacher can do this by asking the students to predict about what will happen in the story after they have seen the cover, pictures of vocabulary in the book.
- d. It is guided because the teacher will be going round to observe what the students are doing and provide them support.
- e. Teacher support students on problem solving, helps the learners to address problems with difficult sentence structure and difficult words that the learners may not easily understand.

Guided reading provides opportunity for learners to interact with wide variety of texts that are within their level. The leveling books are books that are developed for appropriate grades or group of learners. When developing leveling books, there are

features necessary to consider. The words, lengths of words, sentences, pages, spaces between words, illustrations and print layout among others can be considered (Scholastic, 2021). Guided Reading helps the learners to build skills for selecting books of their choice in accordance with their levels vis-a-vis inculcating the habit of love for reading. Teachers can easily assess learners' progress and focus on areas they needed more support during instructions.

2. **The Sight Word Instructional Approach.** These are words that are common in texts which provide or guide in understanding the meaning of a passage or sentences. Sight words are commonly found in basic education learners' book for reading. Most of the words such as *like, and, the, it* appear oftentimes in English text. In Hausa text you will see them as, *sai, da, a*. These sight words make the beginning readers not to disturb themselves to try to sound them out during reading. Most sight words appear in high frequency such as the popular Dolch Sight Word and Fry's Instant Word lists (Marie, 2021). In teaching reading using sight words approach, phonic has less emphasis. Learners read by memorizing the words. This approach is commonly term as "whole word" or "look-say" approach to teaching reading." Marie, (2021) has identified the following strategies for teaching sight words:
 - a. Teacher should use flashcards that can be pasted where the learners will see them oftentimes until they recognize them in a general text
 - b. Teach them as sight words in decodable readers. Decodable readers are those texts that generated using the sounds taught to the learners without including any other different sound.
 - c. Teach the learners on how to identify the sight words in a text. For example, the teacher can ask the learners to use their pencils to circle the sight words or use their crayon to highlight them.
 - d. Use dictation to have the learners spell sight words and paste them on practice sheet in the classroom.
 - e. Using games can also aid understanding of the sight words. The games could contain box of sight words and ask the learners to identify them in a decodable text available in the class.

Sight word is another strategy that can be used to teach learners to read. When learners identify the words, it can aid their comprehension of a text (Marie, 2021). In this approach, learners do not have to decode the sounds of the words, they only need to identify and memorize them as they appeared in a text. The disadvantage of this approach is that it encourages memorization especially when a teacher is incapacitated to use it effectively.

3. **The Linguistic Approach.** This is also regarded as whole approach. Linguistics is the study of the structure of the language and its study which enables the pupil to discover how spoken language is set down in writing (Nicholas, 1970). The printed symbols (words) are viewed as a code and according to the linguist, breaking the code involves analyzing the basic speech patterns of our language (Nicholas, 1970). The process of teaching reading in this approach entails teaching learners to understand the word families. This is different from sight word because it entails the whole words pattern given in a text. In English, there are words that have same family only initial sounds different them. Example, *mat, cat, fat, rat* are all from same family of **at** in a given words (Chiarelli, 2016).

In a linguistic approach, most words presented in reading are phonemically regular and fit a particular pattern (Nicholas, 1970). Linguistic Approaches enriches vocabulary and enable learners to get frequent use of words. It helps learners become use to language pattern and spelling skills. The emphasis on linguistics approach is intersecting with experimental psychology, psycholinguistics, computational linguistics, cognitive linguistics, stylistics, discourse analysis, sociolinguistics, rhetoric, and philosophy in learning to read (Eefje, 2012).

When using linguistic approach, there is assumption that learners have strong background and mother tongue or language proficiency (Sam, 2013). The language proficiency will enable the learners to comprehend words and build spelling skills. There is much emphasis on mother tongue using this approach both in the instructional protocols and the lesson contents. Linguistics helps teachers convey the origins of words and languages, their historical applications, and their modern day relevance. Combined, this approach to teaching language helps students gain a better, more in-depth understanding of their assignments and work product expectations.

Nicholas (1970) has identified the following process of teaching reading using Linguistic Approach:

- a. Introduces short vowel sounds, then select the initial consonant sounds and demonstrates how letters are brought together to form words
- b. Present words in lists and indicate to the learners how they appear in the same pattern
- c. Keep changing the consonants and maintain the sound pattern for learners to understand the alteration and the meaning in a story.
- d. Apply the words pattern in a short stories and introduce irregular words as sight

4. **The Phonics Instructional Approach.** Phonics instructional approach is a way of teaching reading with emphasis on letter (grapheme) - sound (Phoneme) correspondences acquisition and their uses in reading and spelling (Rocket, 2021). It is otherwise regarded as alphabetic principles. It denotes the ability to understand that words are made up of letters and each letter is representing a sound (National Reading Panel, NRP, 2000). Teaching phonics helps learners to know the letters symbol and decode its corresponding sounds in a word. Phonics skill is vital for the learners to know how to read unfamiliar words by themselves using their acquired decoding skills. Having letter-sound knowledge will also allow learners to make the link between the unfamiliar print words to their spoken knowledge (Conversation, 2017). Scientific studies including the National Reading Panel (NRP) have repeatedly found that explicit systematic phonics instruction is the most effective way to teach children how to read (Conversation, 2017). The following are some of the types and process of teaching phonics:

- a. **Synthetic phonics.** Synthetic phonics is the process of teaching reading in which learners are taught on how to convert letters or letter combinations into sounds, and then how to blend the sounds together to form recognizable words (NRP, 2000).
- b. **Analogy phonics.** This entails teaching learners about unfamiliar words using analogy to known words (Conversation, 2017). For example, Analogy builds learners to recognize the rime segment of an unfamiliar word which may be identical to that of a familiar word. It helps learners build the skills to blend the known rime with the new word onset, such as reading *pake* by recognizing that **-ake** is contained in the known word **take, lake, fake or make**. It can also

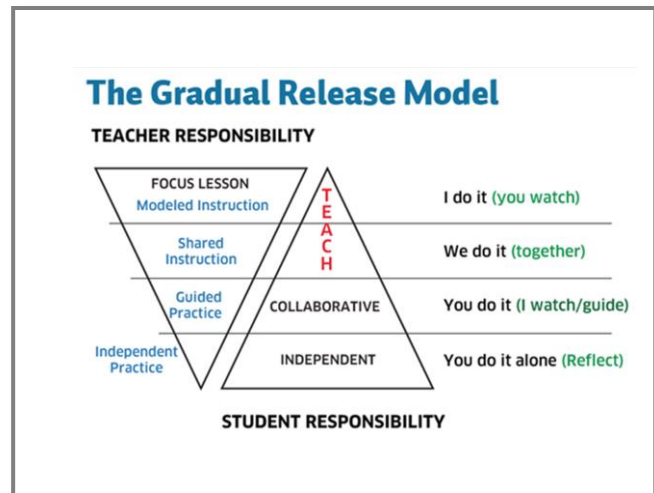
recognize **-ate** in words such as **late, fate, mate, date or kate** that are familiar or unfamiliar to the learners.

c. **Analytic phonics.** In this type of phonics instruction in which learners are taught on how to analyze letter-sound relationships in previously learned words to avoid pronouncing sounds in isolation.

d. **Embedded phonics.**

Teaching students phonics skills by embedding phonics

instruction in text reading, a more implicit approach that relies to some extent on incidental learning.



Phonetic learning to read is considered as strategies used in teaching reading in most Nigerian schools. Learners are engaged to read through identification of graphemes and connecting the sounds to decode a word and read sentences. Teachers are expected to teach using explicit instruction and employ the best method that can make learners to read skillfully (Inuwa, 2021). Learners should be able to identify letters, upper and lower cases and attribute the sound in a spoken language.

Strategies for Teaching Reading

The focus on this part of the paper is to identify some of the strategies that can be used to teach reading. The strategies here are otherwise referred to as methodologies for teaching reading:

1. **Scaffolding Method.** This is a strategy that is used to support learners to read by breaking the learning activity into portions and provide concrete instructional structure to each segment of the content (Alber, 2014). This is otherwise regarded as “I do, We do and You do” method. The term ‘scaffolding’ started from the works of Wood, Bruner and Ross (1976). The concept was developed metaphorically to describe the type of assistance provided by a teacher or peer in a class for supporting learning (Benson, 1997). In the process of scaffolding, the teacher helps the student master a task or concept that the student is initially unable to grasp independently (Benson, 1997).

It is considered being learner-centered approach. In this method, learners are introduced to the knowledge with the support of the teacher, as the learners progress, they take the ownership of the skills or knowledge being introduced to. In a proper scaffolding strategy, it is discernible that facilitators are assisting the learners to internalize the knowledge and master the contents. Zhao and Orey (1999) cited in Lipscomb, Swanson & West (2004), identified five features of scaffolding to include:

- Intentionality to introduce the subject matter very clear to the learners.
- Appropriateness and reach instructional content that can help learners to complete the task in the subject matter on their own with little help.
- Structure of the presentation of the content. Teacher should be able to model the instruction very clearly including the questioning activities.

- d. Collaboration and Support. The teacher should walk through the learners modelling and provide continues support. Learners work can be recast and expanded upon the learners' efforts and encourage them.
- e. Internalization: Teachers scaffolding an activity are gradually withdrawing from the patterns and allow learners to internalize the instruction.
2. **The Basal Reading Method.** This is a strategy of teaching children to read using levelled books, workbooks and activities in sequence in which each book or activity is designed to build on the skills learned previously (Adam, 2007). The word "basal" means "basis" or "fundamental." The basal reading approach creates and builds on a foundation of basic skills. Usually when teaching reading in this context, graded levelled textbooks publish by educational publishers are used. Basal readers are textbooks commonly regarded as "reading books" or "readers." They are usually published as collections that contained short stories or extracts from long narratives that could be of interest to the learners. The books are guided by the features of writing levelled readers that are developed based on code-emphasis or meaning-emphasis approach (Adam, 2007).
- Brianne (2020) identified components of basal reading to include: reading selection in the grade level textbook, instruction on strategies and skills, workbook assignment, independent reading opportunity, management plan that include grouping of learners and assessments.
- Brianne (2020) has provided guidance for the selection of content for different levels when developing basal reading instruction:

Level Book	Guided Learning Skills
Level 1	<input type="checkbox"/> Auditory and visual discriminatory skills <input type="checkbox"/> Finding main idea <input type="checkbox"/> Determining cause and effect <input type="checkbox"/> Follow direction
Level 2	<input type="checkbox"/> Word recognition: 2 syllabus words, contractions, derivatives, <input type="checkbox"/> Understanding sequence
Level 3	<input type="checkbox"/> Identify new word with different vowels sound letters <input type="checkbox"/> Understanding sequence <input type="checkbox"/> Finding main ideas with more development <input type="checkbox"/> Interpretation, pronunciations symbols and other devices
Level 4	<input type="checkbox"/> Word recognition, with focus on structural element <input type="checkbox"/> Making inferences, anticipating a point view from title or selection <input type="checkbox"/> Relating details to topic sentence <input type="checkbox"/> Dictionary skills, determine primary and secondary stress, locating information in encyclopedia, interpreting graphs

3. **Guided Reading Strategy.** This is a small-group instructional context in which a teacher provides supports to all readers in the class. The teacher observes learners' progression through strategic actions and continuously increases their learning level difficulties in the class. During guided reading, learners are arranged in a small-group, they will be supported individually to read a text that a teacher selected for them to read. Mostly these text are at their instructional level (Fountas & Pinnell, 2019). Through guided reading, learners know how to engage in every facet of the reading process and apply that literacy power to all instructional contexts.

Fountas & Pinnell (2019) describe how a guided reading looks like. They see it a small group of learners who are at a similar level of understanding in their reading development are seated across from a teacher at a small kidney-shaped table. Each learner reads, softly or silently, the same text individually. Teacher is always there to provide individual needs support and guide a discussion of the text meaning and make teaching points based on his/her observations of the learners' reading strengths and needs.

The core goal of guided reading is to support the learners use reading strategies at the same time read for meaning independently. Guided reading sessions are made up of three parts:

- a. **Before Reading Discussion:** Teacher is expected to identify the group members and match the text that is appropriate for the learners. The teacher will ask the individual group members to make prediction on what will happen in the text they are about to read on their own.
- b. **Independent Reading:** The will ask the learners to read on their own and be observing areas that learners are having difficulty or asked by the learners and provide them with support.
- c. **After Reading Discussion:** The teacher will ask the learners to come back to their prediction and respond to questions related to the text read.

Fountas & Pinnell (2019) have identified the steps in the guided reading process:

- a. Gather information about the readers to identify emphases.
 - b. Select and analyze texts to use.
 - c. Introduce the text.
 - d. Observe learners as they read the text individually (support if needed).
 - e. Invite learners to discuss the meaning of the text.
 - f. Make one or two teaching points and appreciate the learners.
4. **Gamification Strategy:** Advancement in technology has intrinsically motivated experts to develop many applications that can promote learning to read. Gamification is a simple concept that builds learner engagement, helps to change perceptions and attitudes and develops skills through a practical, applied, and thoroughly hands-on approach to learning (Declan, 2018). Gamification is defined as the use of game thinking and elements (eg, badges, leaderboards and avatars) in a non-game context to create a playing-like experience (Bell, 2018; Kapp, 2012). Gamification makes learning informative and exciting as well as engaging and addictive. Role-play and competitive elements add an immersive angle, which, if set up well, can quite simply make learning fun (Declan, 2018). The development of the digital media has increased basic education learners' reading as they grow up in an era of digital media and online games. On the one hand, increasing digital technologies have changed children's traditional reading approaches and content (Kucirkova & Flewitt, 2020). Moreover, the use of digital entertainment (eg, digital games and online videos) occupies most children's attention and energy, resulting in a recent decline in their print reading for pleasure (Flood, 2015). At present, gamification has been widely used in e-learning to increase learners' learning motivation and engagement.

Learners have the opportunity to know phonics, the sounds of letters (phonemes), engage in decoding activities and develop comprehension skills through gamification. Most game reading programs can be found in tablets, laptops, desktops, online and

cellphones. There are many free applications in the Android, iOS, Apple or Goggle Play stores that are free for download and learning. Declan (2018) has identified the following benefits of Gamification in Learning:

- a. It makes learning exciting and interactive
- b. It creates an addiction to learning
- c. It gives learners the opportunity to see real-world applications
- d. It offers real-time feedback as the learners plays with the game
- e. It enhances the learning experience and develops mental thinking among the players.

Conclusion

Learning mostly takes place in the classrooms with the support and guidance from the teachers. When teachers understood that reading is the bedrock to successful learning in school, they will pay attention to explore various approaches and strategies that can make learners to read proficiently at the basic education levels. The challenge is now thrown back to the teachers in schools, publishers that make the books and the experts in information technology to come up with effective teaching and learning materials and teachers should ensure prudent utilizations in the schools.

Recommendations

1. The Nigerian publishing companies should work with the experts in developing books for beginning learners. There are guiding principles in the development of books especially for the younger learners.
2. Experts in the field of information technology should focus their attention in developing locally designed reading applications that can help the beginners relate the instruction content to their context.
3. Teachers should not rely on single approach or strategy when teaching the basic education learners to know how to read. They should apply the use of multiple approaches to ensure that learners have mastery to the curriculum content.

REFERENCES

- Alber. (2014). 6 Scaffolding Strategies to Use with Your Students, George Lucas Educational Foundation, edutopia.org
- Becton Loveless (2021) Learning to Read to Read to Learn: Myth or Reality? Education Corner, Education that matters: *Education Corners that Matters*.
- Bell, K. (2018). Game on!: Gamification, gameful design, and the rise of the gamer educator. Baltimore: JHU Press
- Benson (1997). The Philosophy and Politics of Learner Autonomy: Independence in Language Learning, Longman, London
- Bruner. JS & Rose. G (1976). The Role of Tutoring in Problem Solving: Journal of Child Psychology and Development. Wiley online Library.
- Chiarelli. N (2017). Presentation on Developing Early Grade Reading (EGR) Literacy Materials. Northern Education Initiative Post Graduate Programme, FCT-Abuja Unpublished.
- Conversation (2017). Explainer: what is phonics and why is it important? Academic rigour, journalistic flair. <https://theconversation.com/explainer-what-is-phonics-and-why-is-it-important-70522>
- Criscuolo, N. P. (1970). A Look At Linguistic Readers. Reading Horizons: A Journal of Literacy and Language Arts, 10 (3). Retrieved: <https://scholarworks.wmich.edu/readinghorizons/vol10/iss3/5>
- David. K et al (2021). How Reading Foster Language Development Around the World: Child Development Research, www.hindawi.com
- Declan Mulkeen (2018). Globalization and the impact of technology on learning, Global Marketing at Learnlight, <https://insights.learnlight.com/en/articles/5-benefits-of-gamification-in-learning/>
- Eefje C. (2012). Linguistic Approaches to Literature: Literary Reading, John Benjamin Publishing companies.
- Flood, A. (2015). Sharp Decline in Children Reading for Pleasure, Survey Finds. The Guardian. [Online]. <https://www.theguardian.com/books/2015/jan/09/decline-children-reading-pleasure-survey>
- Fountas & Pinnell (2019). What is Guided Reading, literacy blog, <https://fpblog.fountasandpinnell.com/what-is-guided-reading>) Featured Posts, Home Fri, Jan 18, '19
- Inuwa B. B (2021), Assessment of Reading Challenges Among Basic Education Learners: Implications For Reading Extension Service Support in Bauchi State, Ph.D Thesis. Unpublished

- Inuwa B. B (2018) Review of Research-Based Practices and Current Approaches to Teaching Early Grade Reading Comprehension in Bauchi State: *International Journal of Tropical Educational Issues*. Vol: 2 NO: 1. ISSN: 978-978-953-736-5
- Jean, D et al (2002). Synthesis of Research on Effective Interventions for Building Reading Fluency with Elementary Students with Learning Disabilities. [PubMed.gov](https://pubmed.ncbi.nlm.nih.gov/)
- Kapp, K. M. (2012). *The Gamification of Learning and Instruction: Game-based Methods and Strategies for Training and Education*. San Francisco: John Wiley & Sons
- Kucirkova, N., & Flewitt, R. (2020). Understanding parents' conflicting beliefs about children's digital book reading, *Journal of Early Childhood Literacy*
- Lookwood, (2008). *Promoting Reading Pleasure in Primary School*, University of Reading, UK.
- Lori E Skibbe et al (2008) *Reading Trajectories of Children with Language Difficulties from Pre-school through Fifth Grade*. Language Speech, Hear Services School.
- Lipscomb, L., Swanson, J., West, A. (2004). Scaffolding. In M. Orey (Ed.), *Emerging perspectives on learning, teaching, and technology*. Retrieved <2020>, from <http://epltt.coe.uga.edu/>
- Marie, Clay (2001). *Change Overtime in Children's Literacy Development*. Portsmouth, NH: Heinemann
- Marie. R, (2021). *Sight Words: What You Need to Know: All About Learning Press*, US
- National Reading Panel (2000). *Report of the National Reading Panel: Teaching children to read – Reports of the subgroups*. Washington, DC: National Institute of Child Health and Human Development
- Nicholas (1970). *Anti-Book: On the art and politics of Radical Publishing*, Minnesota Press.
- RARA (2015). *Reading and Access Research Piloted in Bauchi, Sokoto and Additional 4 States in Northern Nigeria*, RTI international inc.
- R. Goodman (2000). *Development and Well-Being Assessment: Description and Initial Validation of an Integrated Assessment of Child and Adolescent Psychology*, De Crespigny Park, London, UK

**ANALYSES OF UNDERLYING STRUCTURE AND DIFFERENTIAL ITEM
FUNCTIONING OF 2016 USE OF LIBRARY, STUDY SKILLS AND ICT (GSP2202)
EXAMINATION OF BAYERO UNIVERSITY KANO, NIGERIA**

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Abstract

This paper presents the analyses of the underlying structure and Differential Item Functioning (DIF) of 2016 Use of Library, Study Skills and ICT (GSP2202) Examination of Bayero University Kano (BUK), Nigeria. Three (3) research questions were answered in the study with particular reference to career pathway as an indicator for DIF. An ex-post-facto design was employed for the study. The population of the study consisted of 7,875 L200 undergraduate students of BUK and a sample of 1,000 students was selected using multi-stage sampling technique. The analyses were done on responses of students in BUK-GSP2202 examination consisting of 100 items. The research questions were answered using factor analysis, logistic regression analysis and IRT-based item bias analysis. The findings of the study revealed that factor analysis extracted ten (10) factors or components which cumulatively captured 39.208% of the total variance. Logistic regression analysis flagged 47 items as having negligible DIF, 29 with moderate DIF and 24 items with magnitude level DIF. All the 24 items found with large amount of DIF are biased towards Art-based students. From the findings, it is concluded that 2016 BUK-GSP2202 examination has poor content sampling, which was evidenced by 30% of the items loaded on one factor and some of the items of the test are unfair to certain groups. It is recommended therefore, that developers of the examination should employ IRT-based item analysis in detecting bias items in order to improve on the validity of the test.

Keywords: *Differential Item Functioning, Use of library, GSP, ICT, Item/Test Bias, Undergraduate, Bayero University, Kano.*

Introduction

Achievement tests are those tests that measure the current status of individuals with respect to proficiency in given areas of knowledge or skill. An achievement test is an ability test designed to measure what an individual has learnt to do as a result of planned instruction (Gregory, 2007; Gay, 2009; Anikweze, 2010).

In Nigeria, the National Policy on Education (FRN, 2014) specified that a test should measure the knowledge and skills taught in schools. This should be applicable to all test takers irrespective of gender, socio-economic background, location, state and ethnic group etc. Similarly, for any examination to be judged good; the conduct of the examination and the published results should be deemed fair and should achieve high level of acceptance by the public (Madu, 2012). Similarly, the national objective of creating an egalitarian society as stated in the National Policy on Education (FRN, 2014) is one of the foundations upon which education should operate. For these noble objectives to be achieved, test items at any level should discriminate only on the basis of the subject matter ability, not by any extraneous variables such as gender, educational programmes, socio-economic status, language etc.

More so, the examination should ensure that no particular candidate or candidates has/have an unfair advantage over others.

Thus, in order to draw valid conclusions on the results obtained from an achievement test, it is crucial that the test is a valid measurement of what it is designed to measure, i.e. the process of ensuring the validity in a test with respect to the context it is used.

In recent years, policy makers, administrators, and test developers in the field of assessment have paid considerable attention to the issue of test fairness. A fair test is one that is comparably valid for all groups and individuals and that affords all examinees an equal opportunity to demonstrate the skills and knowledge which they have acquired and which are relevant to the test's purpose (Roever, 2005). The process of developing instruments that are fair for all test takers requires the removal or revision of potentially biased items. In practice, this implies that before any instrument is ready for use, all biased items should be first detected, and either eliminated or revised. One way to investigate test bias at the item level is through differential item functioning (DIF) analysis.

The unit currently known as the General Studies Unit (GSU) and the management of the General Studies Programme (GSP) courses in Bayero University, Kano (BUK) offered Use of Library, Study Skills & ICT (GSP2202) for all Level 200 students irrespective of gender or program of study. As such, at the end of each semester, the unit conducts an examination on GSP2202. Typically, the items on the examination are 100 and usually multiple-choice (MC) type with four options ranging from A-D.

There used to be a general outcry from students, more especially those offering Art-based courses that GSP examinations tend to be more difficult than other examinations. Again, it appears that the performance of students offering art-based courses in those GSP courses tends to be poor. This is particularly true of those offering B.A Arabic, Islamic Studies and Hausa in comparison to medical and science students. This has remained a reoccurring feature of the results released by SGSE each semester over the years. Evident to this, is the result of 2016 academic session where 64.3% of those offering non-science-based programmes failed GSP courses, but only 2.3% of those offering science-based programmes failed. In view of this observation, an in-depth research work of this nature becomes necessary to ascertain whether these differences are actually due to differences in the students' ability level or are due to some factors which are irrelevant for the purpose of the examinations.

Objectives of the Study

1. To determine the underlying structure of the items in the 2016 BUK-GSP 2202 examination in measuring use of library, study skills and ICT;
2. To determine the extent to which 2016 BUK-GSP 2202 examination display the DIF effect sizes by Career pathway;
3. To find out whether the items on 2016 BUK-GSP 2202 examination are career pathway biased.

Research Questions

1. What is the underlying structure of the items in the 2016 BUK-GSP 2202 examination in measuring use of library, study skills and ICT?
2. To what extent do the items on 2016 BUK-GSP 2202 examination display the DIF effect sizes by Career pathway?
3. Which of the items on 2016 BUK-GSP 2202 examination are career pathway biased?

Conceptual Clarifications

Differential Item Functioning (DIF)

DIF occurs when a test or a survey item functions differently for a reference group (e.g., males) of examinees or respondents compared to a focal group (e.g., females) of examinees or respondents, after controlling for the level of an attribute being measured (Dodeen & Johanson, 2003; Kamata & Vaughn, 2004). For example, an item exhibits DIF if the probability of males responding to a specific category differs from females when they both are operating at the same overall level on a given construct. Embretson and Reise (2000), assert that, DIF is displaying differences of the probability of answering item correctly according to subgroups, in an ability of psychological structure that is aimed to be measured with the item. In DIF studies, the performances of different groups are compared according to test items related to demographical specifications such as men-women in the same ability level, Asian-European, and so on (Greer, 2004).

There are two groups in any DIF study, i.e. **focal** and **reference** groups. The former, is a group of minorities, which is the potentially disadvantaged group and the latter is a group which is considered to be potentially advantaged by the test. (McNamara & Roever, 2006).

Moreover, there are two types of DIF, namely **uniform** and **non-uniform** DIF. Uniform DIF occurs when a group performs better than another group on all ability levels. That is, almost all members of a group outperform almost all members of the other group who are at the same ability levels. In the case of non-uniform DIF, members of one group are favored up to a level on the ability scale and, from that point on, the relationships are reversed. That is, there is an interaction between grouping and ability level (Bachman, 2004).

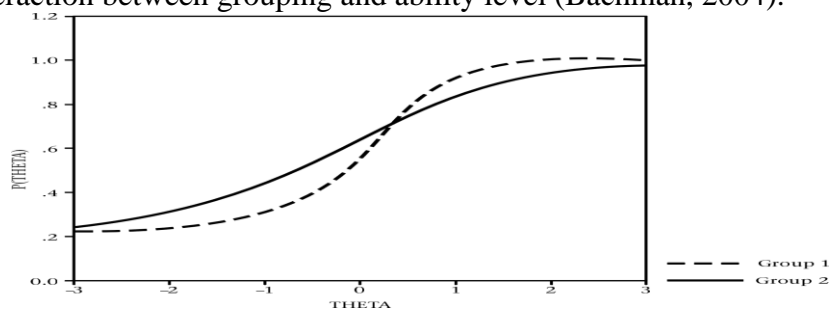


Figure 1 : Item showing uniform DIF by De Beer (2004)

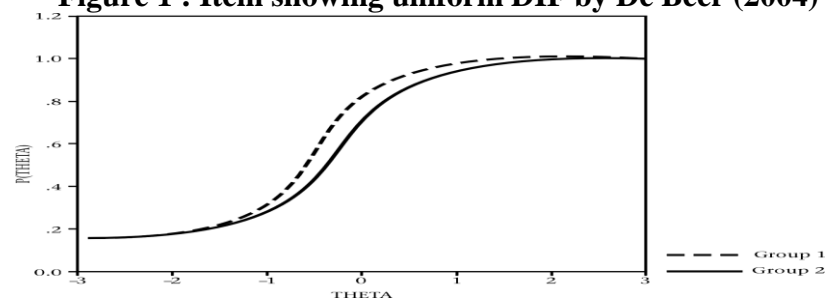


Figure 2: Item showing non-uniform DIF by De Beer (2004)

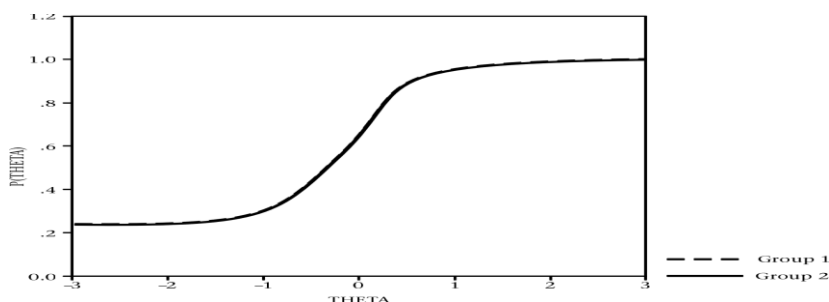


Figure 3: Item showing no DIF by De Beer (2004)

Differential Item Functioning and Test Validity

There is a relationship between differential item functioning and test/item validity.

Since a test is made up of items, validity of a test can be spoken of in terms of the extent of valid items. As reported by Odili (2005), differential item functioning is seen as differential change in item parameter values with respect to subgroup membership. In the light of the above an item is said to be functioning differently if the examinees with the same subject matter ability from two groups (e.g. male and female) have different a - value (discrimination index) b value (difficulty index) and c-value (pseudo-guessing index). It can also be explained as differences in the extent to which a child being tested has had the opportunity to know and become familiar with the specific subject matter or specific process required by the test item simply because the test item is drawn from cultural materials with which, for instance high, socio-economic status pupils have more opportunity for familiarity.

$$PA(\theta = K) \neq PB(\theta = K)$$

In the above statement of equation, as reported by Odili (2005), A and B represent two subgroups; θ represents ability which is equal to K in each group membership. The statement means that a test/item is said to be differentially functioning if probability of members of group A with ability (K) getting the item correct is not equal to the probability of group B with ability (K) also getting the item correct. A test with differentially functioning items is an invalid test. This is because the test is measuring abilities alien to its very purpose. Scores from such test cannot sustain inference concerning the behaviour it has measured (Odili, 2005).

Item Bias/Test Bias

Kanjee (2007), stated that, biased items may a) contain content which may be radically different from a particular subgroup of students' life experience but the assessment results may be interpreted without taking such differences into proper consideration; b) be representing single-gender negative stereotypes, rather than a balance of gender accomplishments; c) contain clues that would facilitate the performance of one group over another; d) contain inadequacies or ambiguities in the test instructions, item stem, keyed response, or distractors.

Bias in test exists if the testing procedure is unfair to a group of individuals who can be defined in some way. A biased test according to Ling and Lau (2005) may be due to presence of relevant, non-target constructs which are related to gender, ethnicity, race, linguistic background, socioeconomic status or handicapping conditions differences in upbringing environment, culture and daily life experience.

Empirical Studies

Many studies have recently been conducted to examine the underlying factor structure of tests. For instance; Wang, Jiao, and Zhang (2013), conducted a study on Construct Validity and Measurement Invariance of Computerized Adaptive Testing: Application to Measures of Academic Progress (MAP). The population of the study comprised 473,135 examinees across 10 states in Canada. The data obtained were analysed using confirmatory factor analysis. The findings from the analysis revealed that all the factor loadings were statistically significant i.e. the factor structure of the test for a particular grade is directly related to the construct validity interpretation of the test. Similarly, Chong Chan (2013), conducted a study on Establishing the Validity of Reading- into- writing Test Tasks for the UK Academic Context in an attempt to establish a test and validation framework. A mixed-method approach was used in the main study. A total of 443 questionnaires from 219 participants were

collected to examine the underlying structure of the cognitive processes (five writing phases). Exploratory factor analysis was performed on all the phases which yielded Eigenvalues greater than one with two or more factors extracted in each phrases. Thus the underlying structures of all the five phases were adequate.

Studies in relation to academic discipline have been examined by numerous researchers. For instance, Birjandi and Amini (2007), conducted a study on Differential Item Functioning (Test Bias) Analysis Paradigm across Manifest and Latent Examinee Groups at Colorado University, Iran. The study flagged 6 items to be performing differently; five items gender and academic disciplines, 3 items (7, 38 and 74) did not favour females and Sciences, 2 items (13 and 52) favour females and Sciences, 3 items (7, 52 and 74) are in favour of males and Humanities. Yunusa (2016) conducted a study to investigate DIF on 2015 English Language Qualifying Examination in public secondary schools in Nassarawa Education Zone of Kano state, Nigeria. DIF with regards to discipline alongside other variables were investigated. The study flagged two (2) items as significant discipline biased. All the items flagged as discipline biased are tilting towards science students. Sa'ad (2018) supported the findings of Yunusa (2016), who conducted a study to investigate the incidence of DIF on 2014 English Language multiple choice questions in North Senatorial Zone of Kano state, Nigeria. The study revealed that about 21% of the items functioned differently by discipline which significantly favoured science students than their non-science counterparts (18 items were in favour of science students while 3 items favoured non-science students respectively).

Methodology

The data used for the study consisted of 2016 multiple-choice GSP 2202 students' responses in Bayero University Kano, Kano State, Nigeria. The Examinees' responses to the items on GSP 2202 of 2016 academic session are the data needed for the analyses. They are already existing data that the researcher collected via a flash drive. The researcher sourced them from School of General and Entrepreneurship Studies (SGES), BUK upon presenting an introductory letter from the Department of Education, BUK. An ex- post- facto design was adopted which seeks to find out the factors that are associated with certain occurrences of already existing condition or state of affairs and searching back in time for plausible causal factors retrospectively (Cohen, Lawrence & Morrison, 2007; Cooper & Schindler, 2001). The population of the study consisted of 7,875 level 200 students out of which one thousand (1,000) were used as the sample from fifteen (15) faculties in Bayero University Kano; namely: Agriculture, Allied Health, Art and Islamic Studies, Biomedical Sciences, Clinical Sciences, Communication, Dentistry, Education, EES, Engineering, FCSIT, Law, Pharmaceutical Sciences, Science and SMS respectively. A large sample size was considered to obtain a stable estimate as a requirement in IRT based analysis (Edelen & Reeve, 2007, Bond & Fox, 2007; Morizot, Ainsworth & Reise, 2007). The item responses were scored in a binary format of "1" correct and "0" for incorrect respectively. In order to analyze the data collected, the following analyses were performed, that is; factor analysis; item analyses (Binary logistic analysis and Item bias analysis). The analyses were done in the following matter: i) exploratory factor analysis was employed in determining the underlying structure of the items on GSP2202;

ii) Binary Logistic Regression analysis was performed in determining the DIF class effect sizes of each item. In order to ascertain the items that exhibit large amount of DIF, Jodoin and Gierl (2001) classified the effect levels of DIF that are determined with logistic regression analysis in the following ways:

A Level: If $R < .035$, a negligible level of DIF is present.

B Level: If $.036 < R < .070$, a medium level of DIF is present.

C Level: If $R > .071$, a magnitude level of DIF is present.

iii) IRT- based item bias analysis was done using IRTPRO (Item Response Theory for Patient- Reported Outcomes) in detecting the direction of the biased items cross career pathway using Item Characteristic Curves (ICCs).

Results of the Analyses

The results of the data analyses are presented in tables according to the research questions.

1. What is the underlying structure of the items in the 2016 BUK-GSP 2202 examination in measuring use of library, study skills and ICT?

Table 1: Summary of Factor Analysis of Items on GSP 2202 Total Variance Explained

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	15.431	15.431	15.431	9.601	9.601	9.601
2	4.726	4.726	20.157	6.498	6.498	16.100
3	2.960	2.960	23.117	3.950	3.950	20.050
4	2.826	2.826	25.942	3.925	3.925	23.975
5	2.570	2.570	28.512	2.734	2.734	26.709
6	2.477	2.477	30.989	2.636	2.636	29.345
7	2.263	2.263	33.252	2.611	2.611	31.956
8	2.057	2.057	35.310	2.555	2.555	34.511
9	2.036	2.036	37.345	2.465	2.465	36.976
10	1.862	1.862	39.208	2.232	2.232	39.208

The above table depicts the summary of factor analysis of items on GSP2202. The result of the Principal Component Analysis (PCA) extracted ten (10) factors or components which cumulatively captured 39.208% of the total variance. Factor (1, 2, 3, 4, 5, 6,7,8,9 and 10) contributed (9.601, 6.498, 3.950, 3.925, 2.734, 2.636, 2.611, 2.555, 2.465 and 2.232) of the common variance with Eigenvalues greater than 1 of (15.431, 4.726, 2.960, 2.826, 2.570, 2.477, 2.263, 2.057, 2.036 and 1.862) respectively.

Table 2: Summary of Factor Analysis Showing the Factor Loading of Items on GSP 2202

Factor Loading	Item Numbers
1 (.345-.680)	69,73,65,77,91,76,38,67,81,63,85,71,21,87,75,58,94,66,92,19,13,49,40,9,57,4,54,92,79,5
2 (.341-.622)	95,98,83,60,96,90,97,8,86,68,18,70,62,53,80,12
3 (.346-.558)	45,52,39,42,61,50,37,48,29,36,32
4 (.326-.501)	11,2,16,34,100,99,20,93,5
5 (.302-.615)	59,64,88,82,55,47,35,3
6 (.322-.477)	23,6,15,30,22,74,28
7 (.332-.650)	43,25,100,52
8 (.404-.536)	44,51,27,46,1
9 (.319-.470)	10,72,31,78,24,56,43
10 (.305-.548)	84,33,8

The table above presents the factor loading values of the items ranging from 0.302 to 0.680. Thus, from the analysis, 30 items were loaded on factor 1, 16 items on factor 2, 11 items on factor 3, 9 items on factor 4, 8 items on factor 5, 7 items on factor 6 and 4 items on factor 7, 5 items on factor 8, 7 items on factor 9 and 3 items were loaded on factor 10 respectively. Thus, it can be concluded that majority of the items, about 30.00% were substantially loaded on factor one (1). The scree plot further illustrates the outcome of the results where the factors above the elbow point on the scree plot were considered as the factors to be extracted from the data set (i.e. 10 components).

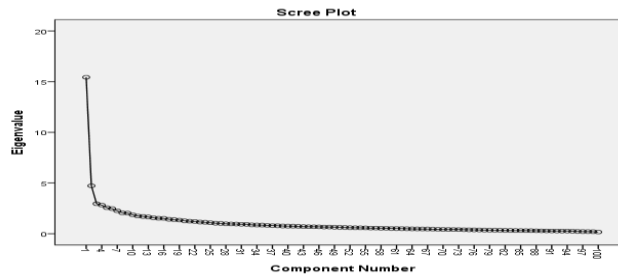


Figure 10: Scree Plot for GSP2202

2. To what extent do the items on 2016 BUK-GSP 2202 examination display the DIF effect sizes by Career pathway?

Table 3: Summary of Logistic Regression Analysis for GSP2202 with Regards to Career Pathway

Effect Level	Item Numbers	Percentage
R < .035, a negligible level of DIF	1,3,4,5,6,7,8,9,10,11,12,14,15,16,17,20,23,24,25,26,27,33,35,37,40,41,42,45,48,49,50,53,56,61,63,72,74,75,76,80,81,84,90,92,93,94,95,	47.00
.036 < R < .070, a medium level of DIF	2,19,28,31,32,34,36,39,43,44,46,47,51,52,54,55,57,59,60,65,66,78,79,82,85,87,97,99,100	29.00
R > .071, a magnitude level of DIF	13,18,21,22,29,30,38,58,62,64,67,68,69,70,71,73,77,83,86,88,89,91,96,98	24.00
Total		100.00

The above table presents the summary of logistic regression analysis with regards to career pathway. It is indicated that 47 items have negligible level of DIF, 29 items were found to have moderate DIF while 24 items (24.00%) were found to have a magnitude level of DIF. Thus, item (13,18,21,22,29,30,38,58,62,64,67,68,69,70,71,73,77,83,86,88,89,91,96 and 98) were found as having magnitude level of DIF.

3. Which of the items on 2016 BUK-GSP 2202 examination are career pathway biased?

Table 4: Summary of Item Bias Analysis of GSP2202 with Regards to Career Pathway

Item No.	Parameter <i>b</i>		Direction of Bias		Item No.	Parameter <i>b</i>		Direction of Bias
	Art	Sci.				Art	Sci.	
Item13	0.74	-0.81	Favours Based	Sci-	Item69	0.75	-1.19	Favours Sci-Based
Item18	0.96	-1.06	Favours Based	Sci-	Item70	0.75	-0.91	Favours Based Sci-
Item21	0.82	0.27	Favours Based	Sci-	Item71	1.27	0.18	Favours Based Sci-
Item22	1.70	0.62	Favours Based	Sci-	Item73	0.69	-0.70	Favours Based Sci-

Item29	0.71	-2.60	Favours Based	Sci-	Item77	0.54	-0.50	Favours Based	Sci-
Item30	1.72	-3.14	Favours Based	Sci-	Item83	0.94	-1.17	Favours Based	Sci-
Item38	1.10	-0.06	Favours Based	Sci-	Item86	0.57	-1.72	Favours Based	Sci-
Item58	0.87	-0.67	Favours Based	Sci-	Item88	2.29	-2.80	Favours Based	Sci-
Item62	1.14	-0.80	Favours Based	Sci-	Item89	3.25	-4.17	Favours Based	Sci-
Item64	4.42	2.29	Favours Based	Sci-	Item91	0.88	-0.50	Favours Based	Sci-
Item67	1.09	0.06	Favours Based	Sci-	Item96	0.54	-0.94	Favours Based	Sci-
Item68	1.10	-0.53	Favours Based	Sci-	Item98	0.83	-0.25	Favours Based	Sci-

The table above portrays the summary of item bias analysis performed via IRTPRO software with regards to career pathway. The outcome of the result indicated that all the 24 items flagged as biased i.e. items (13, 18, 21, 22, 29, 30, 38, 58, 62, 64, 67, 68, 69, 70, 71, 73, 77, 83, 86, 88, 89, 91, 96 and 98) are in favour of science-based faculty students. The ICCs generated from the analysis were not identical for both groups. This signifies that the bias is tilting towards the art-based students. Thus, ICCs for the art-based group shifted more to the right.

Discussion on Results

The discussion on the results are as follows:

In relation to the underlying structure of the items, GSP 2202 extracted 10 components that cumulatively captured 39.208% of the total variance with factor loading values between 0.302 – 0.680. From the findings, it can be seen that majority of the items in the examination were substantially loaded on factor one, this is quite inadequate. Thus the finding from this study contradict the findings of Wang, Jiao, and Zhang (2013) and Chong Chan (2013). These differences can be attributed to the inability of GSP 2202 items to be sequenced and grouped in order of their cognitive and or content demands. Findings with regards to DIF effect sizes revealed that, 24 items (24.00%) were found to have magnitude level DIF indicating the presence of bias. The findings thus, is in accord with the findings of Birjandi and Amini (2007); Sa'ad (2018) and Yunusa (2016). The outcome of item bias analysis performed, indicated that all the 24 items flagged as biased, are in favour of science-based students. Thus, supported the findings of Birjandi and Amini (2007); Sa'ad (2018) and Yunusa (2016) respectively.

Conclusion

From the findings of the study and in view of its limitations, it is concluded that the 2016 BUK-GSP2202 has poor content sampling, which was evidenced by majority of the items loaded on one factor. Thus, there is an indication of split loadings that is to say, the items correlates with one another in producing the extracted factors despite having little or no underlying meaning for the factor(s). Therefore, naming such factor(s) became problematic because the factor names may not accurately reflect the items within the factor(s). It is also concluded that there is an element of biased items which can also distort the validity of the examination and therefore making it not fair to some group of students with regards to their respective discipline of study (career pathway).

Recommendations

1. The University management concerned should ensure that Tests and measurement experts are involved in the construction of GSP course(s). By so doing, issues related to differential item functioning will be reduced.
2. Adequate and balanced content sampling should be adhered to when developing GSP Examination items. This can be ensured by arranging or grouping items with similar contents or demands in sections. And by so doing, the concentration of about 30 to 50 percent of items measuring one aspect of content can be reduced. In this regard, the absurdity associated with split loading can equally be done away with.
3. Items' developers of such examinations should employ IRT-based item analysis in detecting bias items in order to improve on the validity of the test.

REFERENCES

- Anikweze, C. M. (2005). *Measurement and Evaluation for Teacher Education*. 2nd Edition. Enugu: Snap Press Ltd.
- Bachman, L. F. (2004). *Statistical analyses for language assessment*. Cambridge: Cambridge University Press.
- Bond, T. G., & C. M. Fox. (2007). *Applying the Rasch Model: Fundamental Measurement in the Human Sciences*. 2nd ed. Mahwah, NJ: Lawrence Erlbaum.
- Birjandi, P. & Amini, M. (2007). Differential Item Functioning (Test Bias) Analysis Paradigm across Manifest and Latent Examinee Groups (on the Construct Validity of IELTS). *Journal of Human Sciences 1* (55) 153-173
- Chong chan, S.H, (2013). Establishing the Validity of Reading-into-Writing Test Tasks for the UK Academic Context. *European Journal of Psychological Assessment*. 23,(3), 166-175
- Cohen, L. Manion, L & Morrison, K. (2007). *Research Methods in Education* (6th ed). New York: Taylor & Francis Group
- Cooper, D.C. and Schindler, P.S.(2001). *Business Research Methods* (7thed). New York: McGraw-Hill.
- De Beer, M. (2004). Use of Differential Item Functioning (DIF) Analysis for Bias Analysis in Test Construction. *SA Journal of Industrial Psychology*, 30 (4), 52-58
- Dodeen, H. & Johanson, G. A. (2003). An Analysis of Sex-Related Differential Item Functioning in Attitude Assessment. *Assessment & Evaluation in Higher Education*, 28, (2), 129-134
- Edelen, M. O. & Reeve, B. R. (2007). Applying item response theory (IRT) modeling to questionnaire development, evaluation, and renement. *Qual Life Res*, 16, 5.
- Embretson, S.E. & Reise, S.P. (2000). *Item response theory for psychologists*. Mahwah, NJ: Lawrence Erlbaum
- Federal Republic of Nigeria FRN (2014). *National Policy on Education* (6th Ed.). Lagos: NERDC
- Greer, T.G. (2004). Detection of Differential item Functioning (DIF) on the SATV: A Comparison of Four Methods: Mantel-Haensrel, Logistic regression, Simultaneous Item Bias and Likelihood Ratio Test (Unpublished doctoral dissertation). Retrieved from www.readperiodicals.com on 28-06-2012
- Gay, L.R (2009). *Educational Research: Competencies for Analysis and Application* (6thed), New York: Macmillan Publishing Company

- Gregory, R. J. (2007). *Psychological Testing: History, Principles and Applications* (5th Ed.). Boston: Ally & Bacon.
- Jodoin, G.M.; & Gierl M.J. (2001) Evaluating type I Error and Power Rates using an Effect Size Measure with Logistic Regression Procedure for DIF Detection. *Applied measurement in Education*, 14, 329-349
- Kamata, A. & Vaughn, B. (2004). An Introduction to Differential Item Functioning Analysis. *Learning Disabilities: A Contemporary Journal*, 2, (2), 49-69
- Kanjee, A. (2007). Using logistic regression to detect bias when multiple groups are tested. *South African Journal of Psychology*, 37, 47-61
- Ling, S. & Lau, S.H. (2005). Detecting DIF in Standardized Multiple-Choice Test: An Application to IRT Using Three Parameter logistic Model. Retrieved on June 28, 2012, from, www.iiste.org/journals/index.php/JEP/article/download/442/321
- Madu, B.C. (2012). Using Transformed Item Difficulty Procedure to Assess Gender-Related Differential Item Functioning of Multiple-Choice Mathematics Items Administered in Nigeria. *Journal of Research on Humanity and Social Sciences* 2,(6), 41-55
- McNamara, T., & Roever, C. (2006). *Language testing: The social dimension*. New York: Blackwell publishing.
- Morizot, J., Ainsworth, A. T., & Reise, S. P. (2007). Toward Modern psychometrics: Application of item response theory models in personality research. In R. W. Robins, R.C.Fraley, & R. F. Krueger (Eds.), *Handbook of Research Methods in Personality Psychology* (pp. 407-423). New York: Guilford
- Odili, J.N. (2005). Analysis of DIF in 2001 WAEC SSCE Biology Multiple Choice Test. *Studies in Education* 8, 102-109
- Roever,C. (2005). *Testing ESL Pragmatics*. Frankfurt: Peter Lang.
- Sa'ad, N. (2018). *Differential Item Functioning of 2014 School Certificate English Language Examination in North Senatorial Zone of Kano State, Nigeria*. Unpublished PhD. Thesis Bayero, University, Kano, Nigeria
- Wang, S. Jiao, H. Zang, L. (2013). Construct Validity and Measurement Invariance of Computerized Adaptive Testing: Application Measures of Academic Progress (MAP) Using Confirmatory Factor Analysis. *Journal of Educational and Developmental Psychology*, 3(1) 83-100
- Yunusa, S. (2016). *Analysis of Differential Item Functioning of the 2015 Kano State English Language Qualifying Into SSCE in Nassarawa Education Zone*. Unpublished Med Thesis Bayero, University, Kano, Nigeria.

CURRICULUM AND INSTRUCTION IN THE MIDST OF NATIONAL CHALLENGES: THE CONCEPT OF TEACHING

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Abstract

There has been a great deal of studies on curriculum and instruction, still issues including dramatic demographic changes policy changes, globalization, emerging technologies and concern surrounding refugees and immigration remain challenging for both school setting and teacher educators. Teaching has been defined as “an interactive process, primarily involving classroom talk which takes place between teacher and pupil and occurs during certain definable activities” Teaching is a scientific process, and its major components are content, communication and feedback. The teaching strategy has a positive effect on student learning. It is always possible to modify, improve and develop. The new teaching-learning activities, and hence the flexibility is in-built into the system; and “The terminal behavior of the learner in terms of interaction have pointed out that the entire structure of teaching has four steps such as Planning of teaching, Organization of teaching, Identification of suitable teaching technique or strategy and Managing teaching processes. The article deals with characteristics and related activities concerned with teaching.

Keywords: *Teaching planning, Teaching organization, teaching methods, teaching facilities, and teaching activities*

Introduction

Curriculum is what you teach, the content and objectives you want students to master. **Teaching** or **instruction** is the activity managing the classroom conducts. So teaching is part of curriculum and curriculum equally part of teaching.

Concept of Curriculum

Curriculum is a set of intentions about opportunities for engagement of persons to be educated with other person and with things (all bearers of information process, techniques and values) in certain arrangements of time and space (Mohammed S. Khan, (2008). Curriculum is that series of things which children and youth must to do and experience by way of developing abilities to do the things will that make up the affairs of adult life, and to be in all respect of what adult should be. Therefore, curriculum could be regarded as all the experiences children have or to have under the guidance of the teacher in specific and it encompasses all learning opportunities provided by the school i.e. teaching learning experiences guided and directed by the school in general (Lunenburg Fred C. (2011).

Types of Curriculum

Curriculum has meant different things to many people. Various types of curriculum have since been identified by authors. Attempts have been made to classify them according to the various families of learning theories, curriculum orientations or philosophical orientations. The following are some of the different types of curriculum used in schools today; 1) Overt, explicit or written curriculum, 2) Societal curriculum, 3) Hidden curriculum, 4) Null curriculum, 5) Phantom curriculum, 6) Concomitant curriculum, 7) Rhetorical curriculum, 8)

Curriculum in-use, 9) Received curriculum, 10) The supported curriculum, 11) The internal curriculum and 12) The electronic curriculum (Oteh&Akuma,2010).

Curriculum can be seen from different angles. Each angle will provide different classification. If one classification is seen towards another classification, types of curriculum would appear overlapping. One major way of classifying curriculum is **horizontal curriculum** versus **vertical curriculum** both believe in continuing of learning but while horizontal curriculum deals with the continuity of learning arrangements, materials and activities at a particular level, the vertical curriculum deals with continuity of learning across levels, grades and classes(Wearily & Quist, (2003).

National Challenging Issues to Curriculum and Instruction in Nigeria

Nigeria is one of the many countries currently undergoing significant changes in educational institutions. Most pronounced among these is the impact of unprecedented demographical changes on the curriculum and instruction provided in Nigeria school system. Five other factors are also influencing curriculum and instruction including 1) demographic changes, 2) policy changes, 3) emerging new technologies, 4) globalization, and 5) the refugee and immigration issues. Each of these areas provides challenges for both school settings and teacher educators. These challenges and the obstacle they create must be examined and specific recommendations must be developed for teachers, teacher educators, and policy makers to assist in meeting each challenge.

Challenge one: The demographic profile of Nigeria population including its public school population is undergoing rapid and profound changes. The dramatic demographic changes that will occur in the early decades of the 21st century, with tribal and ethnic diversity increasing as baby boomers age and birth rates and immigration laws changes.

Challenge two: Frequent changes in educational policy also influence curriculum and instruction. Among recent changes, implementation of common core education system like 6334, free-basic, basic and post- basic and 21st century skills are not only beneficial to students and teachers but also necessary to prepare our youth for their future careers.

Challenge three: Emerging new technologies also present a challenge to education. Researches has shown that today's students are technophiles they love video games-all past paced and addictive and can't put down their smart phone,. IPod, or social network (Flannery, 2015) Murphy (2005) emphasized that development of educational technologies is changing our belief about how learning occurs resulting in increased pressure from the government as well as shifts from teacher to learner centered approaches to instructions.

Challenge four: Globalization as a process or product, has challenged all dimensions of all human life and all social systems including educational system and its core curriculum and instruction. Globalization is a social process that has passed all the geographical limitation imposed on social and cultural relations and people are increasingly becoming aware of these change (Herrera, 2012).

Challenge five: Today the Nigeria resettles more refugees, immigrants and pupils of the banditry than any other country in Africa. Infect, changing patterns of fertility and immigration have combined to put the Nigeria on an unprecedented path to population diversity and difficult to managed. As a result, the nation's classroom are becoming over populated and more diverse which make accountability models to have exposed holes in education system. These five major challenges to curriculum and instruction addressed above are very crucial and of serious concern to all the policy makers as well as the stakeholders of education in Nigeria.

Concept of Teaching

When a person imparts information or skills to another, it is common to describe the action as teaching. Imparting may mean to share experiences or communicating information, for instance, lecture. Teaching is regarded as both an art and science. As an art, it lays stress on the imaginative and artistic abilities of the teacher in creating a worthwhile situation in the classroom to enable students to learn. As a science, it sheds light on the logical, mechanical, or procedural steps to be followed to attain an effective achievement of goals (Jekayinfa, 2005). Different educationists hold different ideas regarding the concept of teaching. "Teaching is intimate contact between a more mature personality and a less mature one which designed to further the education of the latter"(Murphy,2015).

Teaching is learning as selling is to buying". It is an arrangement and manipulation of a situation in which there are gaps or obstructions which an individual will seek to overcome and from which learner will learn in the course of doing so. Teaching is a system of actions intended to induce learning" (Bolak, Bialach, & Dunphy, 2005). According to Grasha, A., (2010). "Teaching is a form interpersonal influence aimed at changing the behaviour potential another person". Dunphy, (2005) further extended the definition of teaching as a system of actions involving an agent, an end in view and a situation including two sets of factors those over which the agent has no control (class size, characteristics of pupils, physical facilities, etc.) and those which he can modify (such as techniques and strategies of teaching. Isaac, C. Jeri, (2010). Opined that teaching is an interactive process, primarily involving classroom talk which takes place between teacher and pupil and occurs during certain definable activities". Black, Biolach & Dumpty (2005) have contributed significantly towards defining this concept, and their views could be summarized as follows;

- i. Teaching is a scientific process, and its major components are content, communication and feedback.
- ii. The teaching strategy has a positive effect on student learning.
- iii. It is always possible to modify, improve and develop.
- iv. The new teaching-learning activities, and hence the flexibility is inbuilt into the system; and
- v. The terminal behavior of the learner in terms of learning structures can be established by appropriate teaching environments.

Devlin, Marcia and Samara. (2010) have pointed out that the entire structure of teaching has four steps;

Step-I: Planning of teaching which includes content analysis, identification and writing of objectives.

Step-2: Organization of teaching which indicates the teaching strategies for achieving the objectives of teaching.

Step-3: Identification of suitable teaching learning-strategies for effective communication of content.

Step-4: Managing teaching-learning, whereby the focus is on the assessment of the learning objectives in terms of student performance, and this forms the feedback to teacher and students. Teaching is a generic term which denotes actions undertaken with the intention of bringing about learning in another" (Adekoya, & Olatoye, (2011).

The International Encyclopedia of Teaching and Teacher Education (IETTE) have classified the concept of teaching into three categories:

1. Teaching as success signifies that learning is implicated in teaching. Teaching entails learning and can be defined as an activity which necessarily affects learning.

2. Teaching as an intentional activity means that teaching may not logically imply learning, but it can be anticipated that will result in learning.
3. Teaching as normative behaviour denotes action undertaken with the intention of bringing about learning another. It designates a family of activities: training and instructing are primary members and indoctrination.

Training consists of activities that shape skills and other behaviours while instruction and indoctrination go with activities which induce knowledge and beliefs. Teaching can be conceptualized as a form of problem-solving and decision - making which has many properties in common with the work of physicians. This conceptualization has led to a body of research which has investigated the decision - making of teaching focusing in particular on the information about pupils that teachers use to make decisions and the way they tailor instruction to individual pupil needs (Samara, 2010).

Characteristics of Teaching

The characteristics of teaching are as follows:

1. Teaching is an effective interaction between teacher and students.
2. Teaching is both arts as well as science. Teaching is an art as it calls for the exercise of talent and creativity. Teaching as science involves a repertoire of techniques, procedures and skills that can be systematically studied, described and improved. A good teacher is one who adds creativity and inspiration to the basic repertoire.
3. Teaching has various forms, like formal and informal raining, conditioning or indoctrination
4. Teaching is dominated by the skill of communication
5. Teaching is a tri-polar process; the three poles are, educational objectives, learning experiences and change in behaviour.
6. Teaching should be well planned, and the teacher should decide the objectives, methods of teaching and evaluation techniques.
7. Teaching is suggesting and not dictating.
8. Good teaching is democratic, and teacher respects the students, encourages them to ask questions, answer questions and discuss things.
9. Teaching provides guidance, direction and encouragement to the students.
10. Teaching is a cooperative activity and teacher should involve students in different classroom activities, such as organization, management, discussion, recitation and evaluation of results.
11. Teaching is kind and sympathetic, and a good teacher develops emotional stability among children.
12. Teaching is remedial, and the teacher must solve the learning problems of students.
13. Teaching helps children to make adjustments in life.
14. Teaching is a professional activity that helps to bring about harmonious development of children.
15. Teaching stimulates students' power of thinking and directs them towards self-learning.
16. Teaching can be observed, analyzed and evaluated.
17. Teaching is a specialized task and may be taken as a set of component skills for the realization of a specified set of instructional objectives.

Teaching and Related Activities

Exponents of Education have analyzed the concept o teaching and have essayed to differentiate teaching from related concepts such as training, conditioning and indoctrination.

Teaching denotes action undertaken with the intention of bringing about learning in another. In this way, teaching is distinguished from mere telling or showing.

Teaching involves face to face encounter, and the teacher's actions are conducive to bringing about student's learning. Normally, teaching acts fall within a range of activities that covers explaining, describing, demonstration exemplifying, guiding, etc... By "education" in this context is meant specific information of thought, feeling and action distinct from mere socialization. And the goal of educations is the development of critical reflective agents. It is in this context that teaching is distinguished from related activities such as training, conditioning and indoctrination. Training is used less frequently than either conditioning indoctrination. The focus of training is on the development of skill on knowing-how rather than knowing that. Sometimes training reserved for use in the context of the teaching of routine tasks which allow total mastery. Teaching someone a skill requires developing the learner's capacity to respond to the unexpected, to understand what he or she is doing and why to be intelligent and reflective in the exercise of his or her skill. Conditioning, when compared with teaching, is normally operant conditioning and not classical conditioning. Operant conditioning may seem to be simply a systematic form of training and hence teaching. Common school practices such as giving rewards for good behaviour can be described as setting up a situation in which a reinforce depends upon the occurrence of a response, and that is the procedure for operant conditioning. Conditioning, in this sense, will have taken place if the probability of the desired response in the particular circumstances increases because of its association in the experience of the child with the positive reinforce. A child's behaviour could be altered through conditioning without the child being aware of the change or having any notion of why behaving in this way might be appropriate in? The particular circumstances.

Processes which by-pass human rationality are generally held to be unacceptable in a programme of education. Such processes seem less like a form of teaching and more like something resorted to when normal instruction fails. On the other hand, such rational processes as a person's learning some fact by reading or hearing statements in its favors and evaluating the evidence can be described as a process of operant conditioning. In this sense, teaching is not incompatible with conditioning students but only with some ways of doing so. Indoctrination, in its generic sense, is considered as synonymous with teaching. Etymologically, indoctrination is related to the teaching of doctrines. A doctrine is a system of beliefs that provide an explanation or interpretation of the world and indicates how humans ought morally to act in light of the general features of existence that the system has identified.

Conclusion

To conclude, it may be said that, teaching should not only aim at encouraging beliefs which are supported by the evidence but also at developing the power of students to gather the evidence; assess its adequacy for themselves. A programme of education may include the acquisition of the most reliable methods humans have developed for discovering the truth about themselves and the world when teaching skills, the educator makes the students aware of reasons for what they are doing and encourages them to be intelligent and reflective in the exercise of their skills. And though the environment may shape the behaviour of students teachers expect students to act because of perceptions of what they ought to do. It is essential to prepare the students for life by developing their capacity, intelligent freedom of choice rather than simply acquiring thought, feeling and action possessed by the learners (Sauvignon, & Sandra 1997).

Recommendations

The following recommendations are offered for this presentation

1. School must changes the structures, culture, and programs of curriculum and instruction to meet the needs of diverse student body,
2. Researchers in higher education institutions must focus their work to help the federal government, state leaders and school boards or councils decide upon the most appropriate reforms and changes to curriculum and instruction in school settings,
3. more resources from the variety of sources must be invested in technology-use training so teachers can better prepare students to use technology, especially in the context of new assessment,
4. Educators should define and advance an agenda that prepares youth for global citizenship, and
5. The core values of educators must include respect, integrity, commitment and excellence, the promotion of diversity and gender equity, choice and dignity for all students
6. The paper highlighted that planning the lesson in teaching processes is the most essential and required step that one need to take first before going to the class for the lesson.
7. The paper stresses that teachers need to make organization in their lesson arrangements and executions that will lead to successful delivery and clear understanding.
8. Different methods and strategies need to be used while conducting or delivering lesson to the students or pupils, doing this will support effective understanding.
9. Government should provide facilities and teacher need to adequately manage the facilities for their sustainability.

REFERENCES

- Adekoya, Y. M. & Olatoye R. A. (2011). Effect of Demonstration, Peer-Tutoring, and Lecture Teaching Strategies on Senior Secondary School Students' Achievement in an Aspect of Agricultural Science. *The Pacific Journal of Science and Technology*, 12, 320 -332.
- Bolak, K., Bialach, D., & Dunphy, M., (2005).Standards-based, thematic units integrate the arts and energize students and teachers. *Middle School Journal*, 31(2), 57-60.
- Devlin, Marcia and Samara. (2010). the criteria of effective teaching in a changing higher education context. *Higher Education Research & Development*, 29: 2,
- Graham, A., (2010). "A Matter of Style: The Teacher as Expert, Formal Authority, Personal Model, Facilitator, and Delegator, *College Teaching*". 42: 142-149.
- Isaac, Jenin C. (2010). *Methods and Strategies of Teaching: an overview*. Pondicherry University Press
- Jekayinfa,A.A.,(2005) *Fundamental of Instructional Methods*: Olives Production Ltd, C/O Net soft Ballocons,94 Ibrahim Taiwo Road, Ilorin, Kwara State, Nigeria
- Lunenburg Fred C. (2011). *Curriculum Development: Inductive Models*. *Sam Houston State University. Schooling Volume 2, Number 1, 2011*
- Mohammed S. Khan, (2008).*School Curriculum: S. B .Nangia, A.P.H. Publishing Corporation, 4435-36/7, Ansari Road, Darya Ganj, New Delhi*
- Murphy, A. (2015) *Curriculum Past, present and future: Australia Toowoomba Queensland, Australian Digital Futures Institute Press.*
- McMurrer,J.(2007) *Choices, changes and challenges: Curriculum and instruction in the NCLBera*.Washinton,DC:Center on Education Policy Press.
- Otter, J.E. & Akuma, N., (2010). *Curriculum Development and Innovation: Eagle and Joy Educational Publishers, Aba Park, Opposite Lady Aguiyi-Ironsi Shopping Plaza, Umuahia, Abia State, Nigeria.*
- Sauvignon, j., & Sandra (1997). *Communicative competence: theory and classroom practice: texts and contexts in second language learning*. McGraw-Hill.
- Wheelie, G., NY- Quist, J.G. (2003). *Creating an Educational Curriculum for Learners at Any Level. AABB Conference.*

COMPARATIVE EFFECTS OF TRACK AND TREADMILL JOGGING ON CARDIOVASCULAR PARAMETERS OF OBESE STUDENTS OF BAYERO UNIVERSITY, KANO, NIGERIA

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Abstract

This study compared the effects of track and treadmill jogging on selected cardiovascular parameters of obese students of Bayero University, Kano. The population of this study comprised all obese students who visit the University clinic totaling 104 in 2018/2019 academic session. A sample of 48 obese students were purposively selected and randomly assigned to experimental ($n=16$ for track), ($n=16$ for treadmill) and $n=16$ for control group respectively. However only 36 of the participants completed the study 12 each from the three groups. The participants in the experimental groups of both track and treadmill were engaged in jogging exercise three times in a week (Wednesday, Friday and Saturday) for 8 weeks. The control group was advised to continue with their daily routines, after taking their baseline measurement. The cardiovascular parameters (SBP, DBP, RHR, V_{02max}) of all the participants were measured before and after 8 weeks of jogging exercise on both track and treadmill. Analysis of covariance (ANCOVA) was used to test the stated hypotheses at 0.05 level of confidence. The result revealed significant effects on SBP ($f= 5.19$ df 25, $p<0.05$), DBP ($f=4.280$ df 25, $p<0.05$) RHR ($f= 4.058$ df 25, $p<0.05$) V_{02max} ($f=1.035$ df 35, $p<0.01$) on both track and treadmill jogging exercise. Comparing the effect of the two exercise modalities jogging on track and treadmill, it was found that both treatments have effects on cardiovascular parameters of obese students of Bayero University, Kano. But the effect of track on all variables is higher than that of treadmill. It was recommended among others that health practitioners in the University clinic should encourage overweight and obese students who visit the clinic due to one form of weight related condition in order to engage in aerobic exercise by sending them to the University Fitness Laboratory for prescription of appropriate exercise.

Keywords: Resting heart rate, systolic BP, diastolic BP, V_{02max} , jogging

Introduction

Obesity has affected the health of individuals and community at large in significant terms. Overweight and obesity are linked to more deaths worldwide than underweight. It may cause diseases such as cardiovascular diseases, cancer, diabetes and musculoskeletal disorder (World Health Organization (WHO), 2015). A research study revealed that there are nearly 650 million obese adults on the planet, which is identified by having a body mass index (BMI) over 30. There are also about 125 million obese children and adolescent in the entire world. It is also reported that majority of the obese people on the planet reside in a few countries, in fact the top ten countries half the entire world's obesity index (World Population, 7,505,257,673: World obesity, 774,000,000) (Africa News Room, 2017).

Obesity is defined as abnormal or excessive accumulation of fat that present a risk to health. A crude population measure of obesity is the body mass index (BMI) a person's weight (in kilograms) divided by the square of his/her height (in meter), a person with BMI of 30 or more is generally considered obese (WHO, 2016). A wide range of serious diseases are associated with overweight and obesity which includes, coronary heart disease, congestive heart failure, stroke, emphysema, chronic bronchitis, obstructive pulmonary disease, deep vein thrombosis, and some cancers (endometrial, breast, colon, ovarian, liver, kidney) (Petterson, 2004; (National Institute of Health (NIH), 2007). The cardiovascular risk factors related to obesity are hypertension, hypercholesterolemia (or abnormal cholesterol levels), and type II diabetes, it is also noted that the numerous medical conditions linked to obesity include depression, migraine headache, asthma, ulcer, diabetes, bladder infection, osteoarthritis, yeast infection and gallbladder disease. A number of other health concerns associated with obesity include osteoporosis fracture (waist, hip, forearm), joint pain (neck, back, knee) stress, fatigue, chronic insomnia, anxiety, indigestion, heartburn, constipation, skin problems and allergies (Petterson, 2004). Excess level of body fat increase morbidity risk significantly. Multiple studies have identified an association between high body fat and cardiovascular diseases (Romero, Corral- Somers, Sierra- Johnson, Korenfeld, Boarin, Korinek, 2010). Additionally, high level of body fat tends to predict increase risk for the metabolic syndrome, insulin resistance and decrease quality of life. Several research studies indicate an inverse association between fat free mass and cardiovascular diseases risk factors. It is also noted that the relationship between low level of muscles mass and increase risk for dyspeptic, hypertension, obesity, insulin resistance and type 2 diabetes. Conclusively, a low level of fat free mass is an indication of poor health (Romero et al., 2010).

Cardiovascular fitness and body composition can be improve by activities such as jogging, running, trekking, cycling, rowing and swimming which increase aerobic capacity, high efficiency can be achieved by aerobic exercises in resolving health problems especially such as obesity, cardiovascular diseases and bone troubles, regular and enough exercises help persons achieve the desired aim and improve training effects, the enough level is based on exercise type, volume, period and frequency, Noordsy and Pajonk (2012), stated that engaging in sport is a physical and mental intervention for preventing obesity and improving cardiovascular function, aerobic exercise is among the activities with positive effects on human health, concerning physical health, following a physically active life style is recommended to avoid obesity, heart attacks and many other diseases, heavy to moderate physical activities are recommended to be done regularly (Tetlie, Eik-Nes, Palmstierna, Callagha & Nottestad 2008).

Wilhelm, Rech, Minozzo, Radaelli, Botton and Pinto (2014), observed that regular exercise is a well-established intervention for the prevention and treatment of several chronic diseases, including hypertension, higher levels of physical activity and cardiorespiratory fitness have shown to reduce the risk of hypertension in healthy normotensive persons. Kravitz (2017), stated that regular aerobic exercise has significant benefits in terms of risk reduction for overweight and obesity, insulin resistance, type 2 diabetes, blood lipid and lipoproteins abnormalities, hypertension, peripheral vascular disease, cerebrovascular diseases and coronary heart disease, not everyone who is physically active on a regular basis will remain free from these vascular and metabolic diseases, but the progressive effects and the reduction in risk levels are substantial enough to justify the promotion of a physically active life style in all segment of the population, especially the overweight and obese. Victor and Vipene (2014), reported after an 8 week of regular jogging, three days a week for distance of 6km per

session that, boys had better cardiovascular endurance, both sexes showed improved cardiovascular endurance post-training.

This study therefore provided answers to the following research question:

Will effect of jogging on track differ from jogging on treadmill on selected cardiovascular fitness variables: Resting BP (both systolic and diastolic blood pressure) resting HR and maximum oxygen consumption (VO_{2max}) of obese students of Bayero University, Kano?

Hypothesis

There is no significant difference between the effect of jogging on track and jogging on treadmill on Resting BP (both systolic and diastolic blood pressure) resting HR and maximum oxygen consumption (VO_{2max}) of obese students of Bayero University, Kano.

Method and Procedure

Participants

The participants for this study who were purposively selected consisted of 48 students of Bayero University Kano, whose BMI were 30 and above. The selection was based on volunteers (Those who are willing to participate in the exercise). Participants were divided in to three groups, 16 participants in each group. The three groups were randomly assigned in to group A jogging on the track, group B jogging on the treadmill while group C serve as the control group.

The variables measured were: Resting BP (both systolic and diastolic blood pressure) resting HR and maximum oxygen consumption (VO_{2max}).

There were three independent groups: Two experimental groups and one control group all obese. The control group was not engaged in any physical exercise. The control group 16 participants went about their day to day activities after taking their base line test. The experimental groups of both track and treadmill was engaged in 8 weeks aerobic training (jogging) 16 participants jogged on track at Adamu Muazu Mini Stadium Bayero University, Kano, while the other 16 participant jogged on treadmill at Bayero University Gym, three days a week at a progressive intensity of 45% to 75% of the maximum heart rate of the participants. Thus 25 years old participant's training was determined by using a training target heart rate of 45% to 75% as follow:

Maximum Heart Rate MHR= $220-25= 195$ beats per minute.

Starting Target Heart Rate THR= $195 \times .45 = 88$ beats per minute.

Final Heart Rate FHR = $195 \times .75 = 146$ beats per minute.

Those who jog on track wore a digital heart rate wrist watch monitor. Each participant was oriented on his target heart rate based on his/her maximum heart rate and those who jogged on treadmill were oriented on how to place their hands on the treadmill sensor to view their target heart rate. Forthe convenience of the participants, the training programme was conducted from 4:30pm to 5:30pm of every Wednesday, Friday and Saturday. Before commencing the training, each participant had 10minutes warm up exercise (normal walking for at least 400mitres, then stretching exercise).

The percent heart range was used and thus the three progressions (that is initial, improvement and maintenance) of each participant were individualized during the period of jogging/walking exercise. During the exercise there were twelve trained research assistants, eight on track and four on treadmill, to observe the sign and symptoms of weakness, dizziness and lack of muscular coordination. Participant with any one of these signs was asked to slow down or stop for recovery before continuing. Heart rate was taken prior to the starting of the training to ensure the training intensity is adhered to. Intensity was progressively increased. At the first week it was at 45% target heart rate (THR), in the second week it was progressed to 50% THR and maintained to third week. From the fourth week, there was 5% increase each week till 75% final heart rate achieved at the week 8. Exercise begins at lower intensity and progress more slowly every 1 to 2 weeks allowing time for adaptation (Has et al., 2001). The post-test measurement was taken at the end of 8 weeks for all the three groups, two experimental and one control group for final analysis.

The study was conducted with 48 participants, 16 from each of the three (3) groups but as the training programme proceeds only 36 participants were able to reach the completion of the study. The findings present as follows:

Table: 4.1.2. ANCOVA Analysis on Cardiovascular Parameters among groups

Variables	Experimental Track		Experimental Treadmill		Control		df	mean sq	sum sq	f	p
	Pre	Post	Pre	Post	Pre	Pos					
Systolic BP	135.37	127.87	134.00	129.44	134.13	135.63	1	103.554	2174.68	5.190	0.01
							25				
Diastolic BP	88.50	82.06	87.25	83.81	86.88	87.31	1	31.855	509.675	4.280	0.01
							25				
Resting HR	84.50	75.38	85.38	79.75	84.25	87.69	1	112.154	2691.684	4.058	0.01
							25				
V_{02max}	12.79	30.75	13.70	27.06	13.69	11.81	1	91.474	3841.901	1.032	0.03
							25				

*Significant at .05 alpha level ($p < 0.05$) table value (df = 4.05).

Table 2 above indicated the effect of jogging on track and treadmill on selected cardiovascular parameters of obese students in Bayero University, Kano.

On Systolic BP($P < 0.05$), the table showed ANCOVA result of track participants after 8 weeks of jogging on track decreased to 127.8750mmHg, while that of treadmill participants after 8 weeks of jogging on treadmill decreased to 129.4375mmHg at $f, 5.190$ therefore ($F(df 1,25 = 5.190)$, $p < 0.01$ which indicated that there is effect of jogging on track and treadmill on SBP of obese students of Bayero University, when compared the two training modalities it indicates significant difference in the effect of two training. It is observed that the effects of track is higher than that of treadmill, therefore the null hypothesis which stated that there is no significant difference between the effect of jogging on track and treadmill on SBP of obese students of Bayero University Kano is hereby rejected.

On Diastolic BP($P < 0.05$): The table showed ANCOVA result of track participants after 8 weeks of jogging on track decreased to 82.0625mmHg, while that of treadmill participants after 8 weeks of jogging on treadmill decreased to 83.8125mmHg at $f, 4.280$ therefore ($F(df 1,25 = 4.280)$, $p < 0.01$ which indicated that there is effect of jogging on track and treadmill on DBP of obese students of Bayero University, when compared the two training modalities it indicate significant difference in the effect of the two training, it is observed that the effects of track is higher than that of treadmill, therefore the null hypothesis which stated that there is no significant difference between the effect of jogging on track and treadmill on DBP of obese students of Bayero University Kano is hereby rejected.

On Resting heart rate($P < 0.05$), The table showed ANCOVA result of that track participants after 8 weeks of jogging on track decreased to 75.3750mmHg, while that of treadmill participants after 8 weeks of jogging on treadmill decreased to 79.7500mmHg at $f, 4.058$ therefore ($F(df 1,25 = 4.280)$, $P < 0.01$ which indicated that there is effect of jogging on track and treadmill on RHR of obese students of Bayero University, when compared the two training modalities it indicate significant difference in the effect of the two training. It is observed that, effects of track is higher than that of treadmill, therefore the null hypothesis which stated that there is no significant difference between the effect of jogging on track and treadmill on Resting heart rate of obese students of Bayero University Kano is hereby rejected.

V_{02max} ($P < 0.05$): The table showed ANCOVA result of track participants after 8 weeks of jogging on track increased to 30.7475 ml/kg/min, while that of treadmill after 8 weeks of jogging on treadmill increased to 27.0613ml/kg/min at $f, 1.032$ therefore $F(df 1,25 = 1.032)$ $p > 0.03$ which indicated that there is effect of jogging on track and treadmill on V_{02max} of obese students of Bayero University, when compared the two training modalities it indicates significant difference in the effects of the two training, It is observed that, effects of track is higher than that of treadmill, therefore the null hypothesis which stated that there is no significant difference between the effect of jogging on track and treadmill on V_{02max} of obese students of Bayero University Kano is hereby rejected.

Table:3. Summary of Post Hoc on the comparative effect of jogging on track and treadmill on cardiovascular parameter among obese students of Bayero University, Kano.

Variables	Groups	Mean difference	Prob.
Resting HR	Exp, Track vs. Control	- 12.31250	.000*
	Exp, Treadmill vs. Control	- 7.93750	.002
	Exp Track vs. Treadmill	- 4.37500	.084
Systolic BP	Exp, Track vs. Control	-7.75000	.002*
	Exp, Treadmill vs. Control	-6.18750	.003
	Exp Track vs. Treadmill	-1.56250	.526
Diastolic	Exp, Track vs. Control	- 4.25000	.002*
	Exp, Treadmill vs. Control	-3.50000	.003
	Exp Track vs. Treadmill	-.75000	.062
V_{02max}	Exp, Track vs. Control	17.94187	.000*
	Exp, Treadmill vs. Control	16.25563	.001
	Exp Track vs. Treadmill	-17.94187	.335

P<0.05

Table 3 shows the summary of Post Hoc analysis among the groups. The post hoc analysis showed that there is significant difference between the effects of jogging on track and jogging on treadmill on selected cardiovascular parameters: Resting heart rate, when compared experimental track vs. control the mean differences was -12.31250 and p, .001, when compared experimental treadmill vs. control the mean differences was -7.93250 and p, .002, this indicate that the effect of track is greater than that of treadmill on reducing (RHR). On Systolic BP, when compared experimental track vs. control the mean differences was - 7.75000 and p, .002, when compared experimental treadmill vs. control the mean differences was -6.18750 and p, .003, this indicate that the effects of track is greater than that of treadmill on reducing (SBP). Diastolic BP, when compared experimental track vs. control the mean differences was -4.25000 and p, .001, when compared experimental treadmill vs. control the mean differences was -3.50000 and p, .002, this indicate that the effects of track is greater than that of treadmill on reducing (DBP). On V_{02max}, when compared experimental track vs. control the mean differences was 17.94187 and p, .002, when compared experimental treadmill vs. control the mean differences was 16.25563 and p, .003, this indicate that the effects of track is greater than that of treadmill on increasing (V_{02max}).

Findings of the Study

The major findings of the study revealed that:

1. Systolic BP of obese students of Bayero University, Kano more significantly decreased from the effect of track jogging over treadmill jogging exercise after 8 weeks.
2. Diastolic BP of obese students of Bayero University, Kano more significantly decreased from the effect of track jogging over treadmill jogging exercise after 8 weeks.
3. Resting heart rate of obese students of Bayero University, Kano more significantly decreased from the effect of track jogging over treadmill jogging exercise after 8 weeks.
4. V_{02max} of obese students of Bayero University, Kano more significantly increased from the effect of track jogging over treadmill jogging exercise after 8 weeks.

Discussion

The finding of this study indicted significant difference in the effect of jogging on track and jogging on treadmill ($P < 0.05$) on cardiovascular parameters of obese students following 8 weeks jogging exercise, three days a week at 45% - 75% of maximal Heart Rate on the following selected cardiovascular fitness parameters : Resting blood pressure, resting heart rate, maximum oxygen consumption of obese students.

The result of this study revealed a significant reduction of systolic blood pressure of the experimental groups, while that of the control group significantly increased. This is in line with the finding of Clausen (1977), who conduct a study on effects of physical training on cardiovascular adjustment to exercise on obese, he found a significant reduction on systolic blood pressure of the experimental groups, while the control group had a significance increase in their systolic blood pressure. Bajpetyi Reed, Molskness, Newton, Tanner, McCartney, & Houmard, (2012), in their study effect of short term aerobic exercise on intra myocellular lipid content, they found that, aerobic exercise reduced systolic and diastolic blood pressure.

The result of this study also indicated a significant reduction on resting heart rate of the experimental groups. This is in agreement with the findings of Boutcher and Stein (1995), who study on association between heart rate variability and training response in sedentary, they discovered that physical training improve cardiac vagal tone, improved maximum oxygen uptake and decreased resting heart rate. Chacon-Mikahil et al., (1998), who found significant reduction of resting heart rate in experimental groups, while the control group had significant increase in resting heart rate. Rasteger et al (2014), whose study on effect of aerobic exercise on body composition and metabolic syndrome factors in obese males, found a significant reduction in resting heart rate, systolic and diastolic blood pressure in experimental group while an increased in control group was observed. This finding is in line with the work of Fugimoto, et al (2010), whose study on cardiovascular effects of 1 year of progressive and vigorous exercise in previously sedentary diabetes individuals, found significant reduction on resting heart rate of the experimental group, while the control group had significant increase in resting heart rate.

This study revealed the significant increased on VO_{2max} in the experimental groups, while control group has significant reduction in their VO_{2max} . this is in consonant with the findings of Maffeis et al (1994), who study on maximal aerobic power during running and cycling in obese and non-obese children, they revealed that obese children had significantly greater VO_{2max} compared to non-obese subjects (1.55 ± 0.29 and 1.23 ± 0.22 L·min⁻¹, respectively), but this difference was eliminated when values were expressed relative to fat free mass. Similarly, Goran, et al (2000), reported higher absolute VO_{2max} in obese versus non-obese children during treadmill exercise (1.56 ± 0.40 versus 1.24 ± 0.27 L·min⁻¹) but the two groups had no significance difference when VO_{2max} was expressed relative to fat free mass. Similar findings have been reported in obese youth by Ekelund et al, (2004): Treuth, et al (1998). These data are consistent with the conclusion offered by Goran et al. (2000). VO_{2max} is most closely related to lean body mass but not fat mass, the lower VO_{2max} in obese subjects is an expression of metabolically inert fat mass per kg denominator. Chatterjee et al., (2005), documented that loss of weight during weight reduction program in obese increased their VO_{2max} due to withdrawal of fat induced inhibitory action toward oxygen utilization by musculature. Jones & Doust, (1996), stated that track jogging and electrical treadmill jogging thus appeared to encourage a more economical running than non-manual treadmill, with motorized treadmill having a slight, but not significant, lower VO_{2max} compared to track

running. No significant difference in VO_{2max} between track and motorized treadmill running in accordance with the literature when running at a 1% treadmill gradient.

Conclusion

From the finding of this study, the following conclusions were drawn

The effect of track jogging is higher than that of treadmill jogging in reducing resting heart rate, systolic blood pressure and diastolic blood pressure.

It is also revealed that, the effect of track jogging is more than that of treadmill jogging in increasing V_{02max} of obese students of Bayero University, Kano.

Recommendations

Based on the finding and conclusion of the study, it is recommended that:

1. Health practitioners in the University clinic should encourage overweight and obese students who visit the clinic due to one form of weight related condition to engage in aerobic exercise by sending them to the University Fitness Laboratory for prescription of appropriate exercise.
2. Effort should be intensified by the hospital management in collaboration with the Sports Directorate and Human Kinetics Department in motivating and mobilizing students both obese and non-obese by engaging them in extracurricular activities (fitness programme) during weekends, to help either manage or control their obese status.

REFERENCES

- Africa News Room, (2017). Available at <https://brandspung.com>. Retrieved on 12/3/18.
- Bajpetyi, S., Reed, M.A., Molskness, S., Newton, C., Tanner, C.J., McCartney, J.S. & Houmar, J.A. (2012). Effect of short term aerobic exercise on intramyocellular lipid content. *Appl Physiol Nutr Metab*, 37: 822-828.
- Boutcher, S.H., & Stein, P. (1995). Association between heart rate variability and training response in sedentary middle-aged men. *Eur J Appl Physiol*; 70:75-80.
- Chacon-Mikahil, M.P.T., Forti, V.A.M., Catai, A.M., Szrajer, J.S., Golfetti, R., & Martins, L.E.B. (1998). Cardio respiratory adaptations induced by aerobic training in middle-age men: the importance of a decrease in sympathetic stimulation for the contribution of dynamic exercise tachycardia. *Brazilian J Med Biol Res*; 31:705-12.
- Chatterjee, S., Jeo, P., & Bandopadhyay, B. (2005). A Validity of Queen's College Step Test for estimation of maximal oxygen uptake in female obese students. *Indian J Med Res*; 121:32 -35.
- Clausen, J.P. (1977). Effect of physical training on cardiovascular adjustments to exercise on obese men. *Physiol Rev*; 57:779-815.
- Ekelund, U., Franks, P.W., Wareham, N.J., & Aman, J. (2004). Oxygen uptakes adjusted for body composition in normal weight and obese adolescents. *Obesity Research*, 12, 513 – 520.
- Fujimoto, N., Prasad, A., & Hastings, V. (2010). Cardiovascular effects of 1 year of progressive and vigorous exercise training in previously sedentary diabetes individuals older than 65 years of age. *Circulation*. 122: 1797 – 1805.
- Goran, M., Fields, D.A., Hunter, G.R., Herd, S.L., & Weinsier, R.L. (2000). Total body fat does not influence maximal oxygen capacity. *International Journal of Obesity*, 24: 841 – 848.
- Has, B.K., Feigenbaum, S.M., Franklin, R.N., Power, S.K. & Howley E.T. (2001). *Exercise Physiology. Theory and Application to Fitness and Performance*. Fourth Edition. McGraw Hill Company, New York. 255-257.
- Jones, A.M. & Doust, J.H. (1996). A 1% treadmill grade must accurately reflect the energetic cost of outdoor running. *Journal of Sport Science*, 14(4):321-327.
- Kravitz, L. (2017). The most significant health benefit of physical activity and exercise. *IDEA Fitness Journal*, 4, 9, 54 – 63.
- Maffeis, C., Schena, F., Zaffanello, M., Zoccanate, L., Schutz, Y. & Pinelli, L. (1994). Maximal aerobic power during running and cycling in obese and non obese children. *Acta Pediatric*, 83, 113 116.

- National Institute of Health (2007).<http://www.nhlbi.nih.gov/health/dci/diseases/obe/obewhatare.html>.Retrieved on 15/6/2018.
- Noordsy, L.D.&Pajonk, G.F. (2012). Effects of exercise therapy on cardiovascular fitness and the metabolic syndrome in schizophrenia: *A randomized clinical trial. Schizophr*, 30:136-138.
- Patterson, R.E. (2004). A comprehensive examination of health conditions associated with obesity in older adults. *American Journal of Preventive Medicine*, 97, 5, 385 – 390.
- Rasteger, H., Zahra, H.&Mehry, H. (2014). Effects of aerobic exercise training on body composition and metabolic syndrome factors in obese male collagestudents.*Biology of Exercise Journal*,Vol 10, 2.
- Romero- Corral, A., Somers,V. K., Sierra- Johnson, J., Korenfeld, Y., Boarin, S., Korinek, J. (2010). Obesity, a risk factor for cardio metabolic dysregulation and cardiovascular mortality.*Euro Heart* 31 (6) 737-746.
- Tetlie, T., Eik-Nes, N., Palmstierna, T., Callaghan, P., Nottestad, J, A (2008).The effect of exercise on psychological and physical health. *J PsychosocNursMentHealth Serv*. 2008;46 (7):38-43.
- Treuth, M.S., Figueroa, Colon, R., Hunter, G.R., Weinsier, R.L., Butte, N.F. &Goran, M, L. (1998). Energy expenditure and physical fitness in overweight vsnon overweight pre pubertal girls. *International Journal of Obesity and Related Metabolic Disorders*, 22, 440 – 447.
- Victor, O. &Vipene, J.B. (2014). Effect of Eight weeks 6km Run Work/ Training Programme on Physical Fitness Levels of Children. *Research on Humanities and Social Sciences*, 4 (19), 49 – 53.
- Wilhelm, E, N., Rech, A., Minozzo, F., Radaelli, R., Botton, C, E., Pinto R, S, (2014). Relationship between quadriceps femoris echo intensity, muscle power, and functional capacity of older men. *Age.*;36:1113-22.
- World Health Organization (2015).Overweight and Obesity. Accessed on 30/7/21.Available at <https://www.who.int/mediacentre/factsheet/fs311/en>.
- World Health Organization (WHO).(2016) fact sheet on obesity. Available at www.who.int/topics/obesity/en/ retrieved on 23 July 2018.

TEACHERS MOTIVATION FOR IMPROVED JOB PERFORMANCE AS A TOOL FOR ADDRESSING NATIONAL CHALLENGES AMONG TEACHERS IN PUBLIC AND PRIVATE SECONDARY SCHOOLS IN FAGGE LGA, KANO STATE

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Abstract

The study examined teachers' motivation for improved job performance as a tool for addressing national challenges in public and private secondary schools in Fagge Local Government Area, Kano State. Descriptive survey research design was adopted for the study. The population of the study consist 621 secondary schools in the study area and 13,452 teachers in the study area. Random sampling techniques were used to sample the schools and the teachers for the study. Ten (10) secondary school and 140 teachers were selected for the study. The instrument for data collection was constructed questionnaire, that is, structured questionnaire "Teachers Motivation for Improved Job Performance" (TMIJP), three experts from Department of Science and Technology Education, Faculty of Education, University of Jos validated the instrument and the instrument yielded reliability coefficient of 0.80 using Cronbach Alpha coefficient. Research questions were answered using mean score and hypotheses were tested using chi-square of independences variables. From the result it was discovered that teachers were not motivated adequately in term of salary increment and others allowances. The study also discovered that motivation enhance teachers performance to large extend and also enhance job satisfaction. In order to address the national challenges, the study recommended that working environment and condition of the teachers should be adequately enhanced by management (Government and Private) and also government should increase annual educational budget to meet the national challenge in teaching and learning.

Key words: *Teachers' Motivation, Job Performance, National Challenge*

Introduction

The issue of teachers' motivation for improved job performance as a tool for addressing national challenges has become a matter of debate and concern in educational systems. In

most developing countries of the world including Nigeria, there has been a growing awareness about teacher motivation which is a key to quality education, quality outcomes/delivery and high standards in the educational system. It is acknowledged that any nation that is aspiring to maintain high and quality standards in educational system must take teachers and their motivational needs with utmost high level of seriousness.

Teachers are important instrument in education. They are also the pivot on which the educational process hang. Teachers play a major role in the whims and caprices of the educational system. They can influence the teaching learning outcomes either positively or negatively because they determine the quality of instructional delivery and also influence quality education when it comes to implementation of the curriculum and educational policies. They are to be considered when addressing issues such as: quality education; quality delivery (teaching), quality context and quality learning outcomes (Onucha, 2002).

However, they are the custodians of the educational and school systems. Since teaching can be regarded as a systematic, rational and organized process of transmitting knowledge, skills, attitudes, values and what is worthwhile (education) in accordance with certain professional principles; there is need for the services of efficient teachers (whose knowledge is bonded with innovations) in order to achieve the educational objectives.

Without teachers in the school system, there will definitely be no learning. Teaching makes learning take place and teacher determines the quality of learning/instructions that will be given to learners. This is the more reason why they should be motivated properly for effectiveness and efficiency in the educational and school system. The National Policy on Education (2004) expressed that no nation can rise above the quality of its teachers. If the quality of existing stock of teachers in Nigeria is inadequate, inefficient and ineffective and teaching in low esteem; raising the level of societal enlightenment and the educational standard may be in jeopardy.

Teachers' job performance is a concern of everybody in the society. Hornby, (2000) defines performance as the act or process of carrying out something or execution of an action or a repetitive act or fulfilment or implementation. In this respect, teacher performance connotes the teachers' role of teaching students in class and outside the class. The key aspects of teaching involve the use of instructional materials, teaching methods, regular assessment of students, making lesson plans, assessment of students, conduct of fieldwork, teachers' participation in sports, attending school assembly and guidance and counselling. Therefore, teacher job performance is the teacher's ability to integrate the experience, teaching methods, instructional materials, knowledge and skills in delivering subject matter to students in and outside the classroom. Teacher performance in this study was measured by regular and early reporting at school, participation in extra-curricular activities, supervision of school activities, adequate teaching preparation (schemes of work, lesson plans), marking and general punctuality among others.

Teacher motivation has become an important issue given their responsibility to impart knowledge and skills to learners. It is argued that satisfied teachers are generally more productive and can influence students' achievement. Motivation guide people's actions and behaviours toward achievement of some goals. In work and other contexts therefore, motivation is often described as being intrinsic or extrinsic in nature (Sansone & Harackiewicz, 2000). Intrinsic motivation derived from within the person or from the activity itself, positively affects behaviour, performance, and well-being. Extrinsic motivation on the

other hand, results from the attainment of externally administered rewards, including pay, material possessions, prestige, and positive evaluations among others.

Owens (2004) describes motivation as the forces that cause people to behave as they do. According to Peretomode (2001) motivation is the process of influencing or stimulating a person to take action that will accomplish desired goals. However, teachers' motivation is a way of empowering teachers in the occupation and involves the perceptions, variables, methods, strategies and activities used by the management for the purpose of providing a climate that is conducive to the satisfaction of the various needs of the employees, so that they may become satisfied, dedicated and effective in performing their task. In education, teachers should be motivated in order to boost their productivity, effectiveness, efficiency and dedication in performing their task, which will enhance quality assurance, quality education and quality instructional delivery in the educational system. This will also enhance the achievement of educational objectives (Obi, 2007).

Peretomode (2001) opined that teachers' motivation relates to a purposive and goal-directed behaviour, performance and attitudes towards work. It includes considering such factors as the physiological, psychological and environmental differences of individual employees. It also leads to job satisfaction which is defined as the feelings (either good or bad) one has about his/her work and the work environment.

The issue of teachers' motivation and job performance has become a matter of debate and concern in educational systems and standards. In most developing countries of the world including Nigeria, there has been a growing awareness about teacher motivation which is a key to teacher performance, quality outcomes/delivery and high standards in the educational system. It is acknowledged that any nation that is aspiring to maintain high and quality standards or achieve quality assurance in its educational system must take teachers and their motivational needs with utmost high level of seriousness.

Teachers are motivated in their work when they feel good. They feel good when the principal or stakeholder avoids 'professional myopia' and when teachers do not work in an uncompromising context. In this situation teachers' job-related ideals incorporate ethical, epistemological, affective, professional, economic and egocentric considerations which shape their views on equity and justice, pedagogy and andragogy, organisational efficiency, interpersonal relations, collegiality, self-conception and self-image (Evans 2001).

Onucha, (2002) stated that there are a multitude of factors that energise teachers' behaviour which are determinations by needs, incentives, fears, goals, social pressures, self-confidence, interests, curiosity, beliefs, values and expectations. However, all these causes can be grouped into two main categories of motivation, namely intrinsic and extrinsic motivation. Both types of motivation are contextual as they characterise people in relation to activities.

Today with increasing demands placed on teachers in contexts of increased tendencies of a breaking down of the culture of teaching and learning on account of increasingly pervasive societies, it is difficult to urge teachers to put their heart and soul into their work. As a matter of fact, the work has become a place of disappointment; teachers start with enthusiasm and creativity, but day after day, they feel more and more helpless, overwhelmed, exhausted and bored. In view of above makes the researcher to investigate the effects of motivation on teachers' job performance in public and private secondary schools in the study areas.

Statement of problem

National development is a principal agenda stated in the national education system. This is due to the fact that good education system will result in progress of the nation. There are a lot of quality problems in the education world such as the qualities of graduates, teaching methods, teachers' counseling and training, professionalism and teachers' performances. Such qualities are related to the administration of educational leaders, limitation of budget, accessibility, media, school climate, school environment, and support from various responsible parties. All quality limitations of the education components lead to the lower quality of graduates.

Poor living and working conditions have overtime, seriously eroded many teachers motivation to carry out their teaching and non-teaching in acceptable manners. Most teachers paid low salary that demoralized them in teaching and learning process because that salary does not meet the basic needs effective per month like food, clothes and other luxury goods, but due to this situation encourage teachers to seek another job like driving motorcycle and part time job in order to meet the basic needs for them and their family.

However, high productivity and performance of any educational organizations could not be realized without employee's (teachers) support and contribution. This is because employees (teachers) are partly responsible for the achievement of educational goals and national development. Based on this, the study examined teachers' motivation for improved job performance as a tool for addressing national challenges among teachers in private and public secondary schools in Fagge LGA, Kano State.

Objective of the Study

The study is to examine the effects of motivation on teachers' job performance in public and private secondary schools. The specific objectives of this study are as follows:

1. To find out the factors that affects teachers motivation in secondary school
2. To find out types of motivation giving to teachers' in secondary school in the study area.

Research Questions

The following research questions will guide the researcher on determine the effect of motivation on teachers' job performance in the study areas.

1. What are the factors that affect motivation in secondary school
2. What are the types of motivation giving to teachers' in secondary school in the study area

Hypotheses of the Study

The following hypotheses will be tested at 0.05 level of significance.

1. There is no significant difference between the types motivation giving in private secondary school and public secondary school in the study area.

Methodology

Descriptive survey research design was adopted for the study, this enable the researcher to make use of a sample out of a large population in the study area. Ali and Eyo (2000), explained survey research design as one which studies large or small population by selecting and analysing data collected from the group through the use of questionnaire.

The population of the study consist 621 secondary schools in the study area and 13,452 teachers in the study area. Random sampling techniques were used to sample the schools and the teachers for the study. Ten (10) secondary school and 140 teachers were selected for the study. The instrument for data collection was constructed questionnaire, that is, structured questionnaire “Teachers Motivation for Improved Job Performance” (TMIJP), three experts from Department of Science and Technology Education, Faculty of Education, University of Jos validated the instrument and the instrument yielded reliability coefficient of 0.80 using Cronbach Alpha coefficient. Research questions were answered using mean score and hypotheses were tested using chi-square of independences variables.

Results

The results of the study was analysed based on the research questions and hypotheses stated. Any response score with a mean from 3.00 and above are considered accepted and any response score with mean below 3.00 are considered rejected.

Research Question 1: What are the types of motivation giving to teachers in secondary schools in the study area?

Table 1: Types of motivation giving to teacher

SN	Types of motivation	Mean (X)	Decision
1	Salary increment	1.50	Rejected
2	Study leave	2.17	Rejected
3	Teacher empowerment	2.04	Rejected
4	Promotion	2.20	Rejected
5	Recognition in the society	2.14	Rejected
6	Token appreciation	2.00	Rejected
7	Accommodation	2.07	Rejected

From the analysis in table 1 above it showed that all the items in the table were rejected (i.e items 1, 2, 3, 4, 5, 6, and 7 respectively) because the means score are below the criterion mean score. From the analysis it was discovered that teachers were not motivated adequately in term of salary increment, giving study leave, teachers’ empowerment, promotion, recognition in the society, token appreciation and accommodation.

Research Question 2: What is the relationship between motivation and teachers performance in secondary schools in the study area.

Table 2: Relationship between motivation and teacher job performance.

SN	Statement	Mean (X)	Decision
8	There is positive relationship between your performance in teaching-learning and motivation in your school?	3.75	Accepted
9	There is positive relationship between motivation and job satisfaction?	4.29	Accepted
10	Motivation enhance teaching and performance in educational setting	4.86	Accepted
11	Motivation enhance jobs satisfaction	4.93	Accepted
12	Motivation does not have anything to do with teacher performance in educational setting	1.96	Rejected

From the analysis in table 2 above showed that motivation enhance teacher performance to large extend (very high) and also enhance jobs satisfaction with mean score of 4.86 and 4.93

respectively. It means that motivation and performance are highly related, that is, Teachers Motivation Improved Job Performance.

Hypothesis 1: There is no significant difference between the types motivation giving in private and public secondary schools in the study area.

Table 3: calculation of chi-square for hypothesis Two

Cell	OF	EF	OF – EF	(OF – EF) ²	(OF – EF) ² EF
1	30	28.34	1.66	2.76	0.10
2	60	61.66	-1.66	2.76	0.04
3	20	22.04	-2.04	4.16	0.19
4	50	47.96	2.04	4.16	0.09
5	5	4.72	0.28	0.08	0.02
6	10	10.28	-0.28	0.08	0.01
7	10	12.60	-2.60	6.76	0.54
8	30	27.40	2.60	6.76	0.25
9	5	3.15	1.85	3.42	1.09
10	5	6.85	-1.85	3.42	0.50
11	3	1.57	1.43	2.04	1.30
12	2	3.43	-1.43	2.04	0.59
13	1	1.57	-0.57	0.32	0.20
14	4	3.43	0.57	0.32	0.09
Σ			0.00		5.01

Calculated $X^2 = 5.01$, Table value = 12.592, $\alpha = 0.05$, Decision: Accepted

From table 3 above, shows that the calculated value of Chi-square is less than table value ($5.01 < 12.592$), therefore, the null hypothesis is retained, that is, there is no significant difference between the types of motivation giving to teacher in private and public secondary schools in the study area.

Discussion of Findings

The study examined teachers' motivation for improved job performance as a tool for addressing national challenges in public and private secondary schools in Fagge Local Government Area, Kano State. From the analyses of the research questions, it was discovered that teachers were not motivated adequately in term of salary increment, study leave, teacher empowerment, teacher promotion, recognition in the society, token appreciation and accommodation were not given to teachers, this makes the de-motivated toward teaching profession. Maicibi (2003) is in agreement with the above view, Maicibi stated that teachers are not adequately motivated in terms of salary increment, promotion and recognition in the society. The study also discovered that motivation enhance teachers performance to large extend and also enhance job satisfaction. This means that motivation and teachers performance are highly related and is a tool for addressing national challenges in public and private secondary schools. This is in agreement with Mumanyire (2005) noted that teaching profession suffered greatly from the negative effects due to inadequate motivation of teachers, because teachers were not well motivated makes teacher education which brings about falling standard in education and poor performance of teachers. He further stated for standard of education to be consistent, teachers need to be motivated.

From the hypotheses tested it showed there is no significant difference between the types of motivation giving to teacher in private and public secondary schools in the study area because calculated value of Chi-square is less than table value ($5.01 < 12.592$) therefore, the null hypothesis is retained. This agreed with Betchod (2005) noted that there is no difference

between the motivation giving to employees in private and public organisation. Also Kiseesi (2008) stated that there is no significant difference between private teachers and public teachers in terms of motivation.

Conclusion

Base on the findings of this study, it was deduced that, motivation of teachers addresses contemporary issue and it relevant to teaching and learning at all level of education. The results of the research also showed that teachers were not motivated adequately in term of salary increment, study leave, teacher empowerment, teacher promotion, recognition in the society, token appreciation and accommodation were not given to teachers, this makes the demotivated toward teaching profession. The study also showed that motivations of teachers are not adequate enough to encourage them in their performance (teaching process), therefore, it makes teachers to show careless attitude toward teaching profession. In other to address the national challenges in teaching and learning, teacher need to be motivate because teacher motivation influence teachers' performance to a large extends.

Recommendations

Based on the results of the findings of the study it becomes necessary to make the following recommendations which are considered essential as a tool for addressing national challenges in public and private secondary schools

1. Working environment and condition of the employees (teachers) should be adequately enhanced by management (Government and Private). Incentives such as study leave, medical cares, housing allowances, etc., should be adequately provided to bring about high intrinsic motivation in teaching and learning, this will address some national challenges in teaching and learning.
2. Provide the training and resources teachers need to do the work and, recognize teachers for good performance, both formally and informally.
3. This study also recommends that government should increase annual educational budget to meet the national challenge.

REFERENCES

- Ali, M. Y. & Eyo, N. (2000). Research methods. Ibadan: Oniboje Press.
- Bakker, L. (2005). Teacher motivation and satisfaction: Impact on participatory management. *NASSP Bulletin*, 76(540): 37.
- Betechod, P. H. (2005). Job satisfaction and job performance: A metaanalysis. *Psychological Bulletin*, 97, 251-273.
- Evans, L. (2001). Delving deeper into morale, job satisfaction and motivation among education professionals: re-examining the leadership dimension. *Educational Management and Administration*, 29(3)291-306.
- Federal Republic of Nigeria (2004). *National Policy on Education*. 4th Ed. Yaba: NERDC
- Hornby, T. P. (2000). Principles and practice of education, London: Longman Group Ltd.
- Kiseesi, H. J. (2008). Principals' and teachers' perception of teacher empowerment. *Journal of Leadership Studies*, 7(3):115-118.
- Maicibi, N. A. (2003). Pertinent issues in employees' management: human resource and educational management. Kampala: Net Media Monitor Publishers.
- Mumanyire, M. (2005). Factors affecting teacher motivation in secondary schools in Mukono district. Unpublished (Masters of education) dissertation, Makerere University, Kampala, Uganda.
- Obi, E. (2007). Motivation and organizational behaviour. In Ndu, A.N.; Ocho, L.O. and Okeke, B.S. (Eds.). *Dynamics of educational administration and management – The Nigerian perspective*. Awka: Meks Publishers Limited.
- Onucha, G. M. (2002). Teacher empowerment and the leadership role of principals. *South African Journal of Education*, 18 (3): 131-138.
- Owens, R. G (2004). *Organizational Behaviour in Education: Adaptive Leadership and School Reform*. (6th Edition). Needham Heights: Allyn and Bacon.
- Peretomode, V.F. (2001). Educational administration, applied concepts and theoretical perspectives for students and practitioners. Lagos: JOJA Educational Research and Publishers Limited.
- Sansone, E. R. & Harackiewicz, D. (2000). The motivation to work. New Jersey: Transaction Publishers.

**SOCIAL STUDIES EDUCATION: EFFICACY AND RELEVANCE IN THE
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08027080165**Abstract**

National challenges are problems, flights, difficulties or predicaments that confront Nigeria. Security challenges such as insurgencies, kidnapping, armed robbery, vandalization, ethnic crisis, as well as economic challenges that entail persistence rise in general price level, absolute poverty widely spread among Nigerians, naira devaluates all the time, joblessness increases etc and political challenges where corruption has been accepted, embraced and become the pride of the people. This paper aimed at exposing the potency, efficacy and relevance of social studies education in minimizing the identified national challenges. Social studies is a value oriented discipline, that deals with issues of citizenship education, family life education, law related education, contemporary public issues etc, which if properly and wisely implemented can help to address national challenges. This paper further recommends that social studies education should be implemented at all level of education since it is value oriented discipline, so that citizen should learn and acquire appropriate values suitable for addressing national challenges.

Keywords: *Social studies, education, efficacy, national challenges*

Introduction

National challenges are problems, plights, difficulties, predicaments that are confronting Nigeria. These challenges are numerous. Nowadays in Nigeria, all human endeavours are full of problems. For instance, the economy of the nation is now paralyzed, because of the persistent rise in the general price level, Naira devaluation, corruption everywhere, food shortage, wide spread of poverty etc (Arewa Radio News @6pm 14th August, 2021).

Security challenges, insurgency in Borno, Yobe, Gombe, kidnapping in Kaduna, Zamfara, Sokoto, Katsina, tribal or ethnic crisis in Benue, Kaduna, plateau etc, vandalization in the Niger Delta areas, wide spread of weapons which gave birth and spurred all the above crimes

etc. wide spread of drug trafficking and abuse that greases and strengthening crimes, Nigerian politics has become cripple where injustice is still growing and threatens peace in the country etc (Haralambas, 2013).

No human problem that cannot be solve hence, social studies as a value oriented discipline, value laden discipline, which encompasses issues such as citizenship education, family life education, population, law related education, contemporary public issues etc has the propensity to provide solutions to the national challenges if properly and rationally implemented.

Concept of Social Studies

The nature of social studies education and its major focus on man couple with the relative newness of the discipline in relation to other traditional social science and physical sciences bring about disagreement among social studies education on the meaning of the subject. Considering man and his uniqueness, his study in relation to his activities in his environment must be viewed from different angle depending on scholars' perception about man and his activities.

Social studies is an integrative fusion of content and generalization from social science and humanities. It is also viewed as a citizenship education. It is a vehicle for human skills development, and it is the ecological studies as well as value ladden field of study (Mezieobi, 2008).

The Nigerian social studies is an integrated curriculum in which the terms and elements of knowledge have been synthesized to enable the individual acquire values and skills for useful settle life within and outside his immediate community. The integration and unification of various concepts and disciplines in social studies deals with the problems of mans social, physical and psychological environments. Social studies learning provide students with skills and knowledge to help them in their everyday life by developing individual who understand their identity and the dynamic nature of society (Bayero 2007 in Hauwa, 2012).

Ololobou (2007) explained that social studies was introduced into Nigerian schools to correct imbalance of colonial education and to inculcate in Nigerian students awareness of their own environment, national consciousness and national unity, and also to promote the understanding of the social problems within our society and finding possible solution. In another dimension, Mayanchi (2012) in Abubakar (2015) sees social studies as a problem solving subject. This definition could be relevant to the purpose of social studies in Nigeria as stated by Ololobou (2007). "It is being used to inculcate the concept of nationalism, unity and interdependence among a citizenry that is diverse. Social studies is a process of education which emphasizes the relationship human beings have with their physical and social world. The primary concern of social studies education is to equip the learners with selected knowledge, skills attitude and social actions concerning the relationship people are having with each other and the environment in which they live (NTI, 2000).

Social studies has been described as a way of life as it touches on all spheres of human endeavour. Social studies also describes how man tries to solve the problem of survival in environment that man finds himself (Fadeiye, 2011). Okam (1998), in Bawa (2012) observed that in many nations of the world, social studies aims at achieving the following aims:

- (a) Improvement of self — image of the people in the society after the colonial heritage.
- (b) Initiation of people into learning of ways of improving the economy of their society.

- (c) Enabling people, nations and government to develop global perspective regarding certain issues or problems as a result of recent international development.
- (d) Development and maintenance of respect in interpersonal relationship;
- (e) The transformation of the political culture for the purpose of inculcating concept of nationalism, unity and interdependence among the citizenry of new nations with diverse population. Therefore, social studies provides us with the ways of looking at the society and looks for ways of solving such problems.

Philosophical Background

Before the Second World War, (1939 — 1945), social studies did not exist as a separate subject in the school system of many countries, certain factors gave rise to its development as a separate subject. After the war, there was the need to re —establish and promote good human understanding and relationship among the people of the world. Besides, it was also necessary to promote democratic principles and values among the peoples of Europe and America. Social studies originated from the United States of America in the 1950s.

In Nigeria, social studies came as an answer to specific national problems. In the late 1960s most educators, in Nigeria agreed that the school must be Nigerian in outlook rather than emphasizing foreign ideals. It was thought that through social studies, a love of the country would be developed in the Nigerian child in such a way that they would be developed with strong attachment to their country and environment. There was also an idea to integrate social science subjects (e.g history, geography, political science and economics) as means of studying the entire society. After the civil war, (1967 —1970) it came to be felt that the study of the society and its proper understanding could be better done through an integrated subject that would enlist various aspects of separate social science subjects and look at the realities of life in the inter connectedness NTI (2000).

Objectives of Social Studies

Despite the fact that there is no consensus about the goals of social studies, there is however the general idea that social studies has influence on the beliefs and values of the learners and that is undoubtedly produces good citizens. Social studies could be said to be society based, in the sense that it is geared towards solving the problems of society. Its objective is geared towards solving the problems of society. These problems as stated by Mayanchi (2011) in Abubakar (2015) include dishonesty, selfishness, bribery and corruption. Other problems associated with the Nigerian society are; Insecurity, lack of unity, ethnic and religious intolerance. According to NTI (2000), the objectives of Nigerian social studies, which are developed to reflect the spirit of Nigerian philosophy of education, lay emphasis on the integration of the integration of Nigerian citizens into effective citizens.

The objectives are;

- (1) To create awareness and an understanding of our social and physical environment in order to conserve it for national development.
- (2) To develop a capacity to learn and acquire certain basic skills of literacy, numeracy and critical essential to the forming of sound judgment concerning social, economic and political issues.
- (3) To teach the child to acquire a relevant body of knowledge and information necessary for personal development and contribution to the betterment of mankind.
- (4) To develop appreciation for the diverse nature and interdependence of Nigerian communities, wider national communities.

- (5) To develop in students, positive attitudes towards the spirit of friendliness and cooperation necessary for a healthy nation, and to inculcate appropriate values of honesty, integrity. Hard work, fairness and justice (NTI, 2000).

Nature and Scope of Social Studies

The relative newness of social studies in Nigeria coupled with the varieties of persons, professional's social studies educators and generalist' social studies personnel who are associated with social studies have led to an over does of social studies definitions. Perhaps the search for a definition of social studies in Nigeria that would provide the directional framework or basis for professional social studies have its own conceptual definition of social studies, in terms of the availability of many definitions of social studies program encompasses four broad areas (NTI 2000);

- (1) The environment; both physical and social, emphasizing on unrestricted cognition.
- (2) Various skills (e.g. manipulative, intellectual, group communication, study, economic.) for functionality relating with the environment.
- (3) Values, attitude, aspirations, appreciations and actions which are conducive to peaceful co-existence and overall societal development.
- (4) Emergent issue (e.g. HIV/AIDS, human trafficking, terrorism, child abuse, etc) and other current affairs:

The scope of social studies makes for a balanced producing well rounded individuals, it seeks to produce effective citizens. Areas for specialization are beginning to emerge at graduate level i.e for Master and PhD studies. Such areas, among others, include;

1. Curriculum studies
2. Sexuality and family life education
3. Population education
4. Citizenship education
5. Development studies
6. Peace education
7. Values education
8. Socialization and personality development
9. Child right or child abuse
10. Common wealth studies
11. Human rights
12. Environmental education (Ololobou 2007).

The Concept of Education

In general, the great aim of education should be to develop to full the individual possibilities of every child in accordance with laws of God, and hence to the general good of community (Byrne, 1976:1). Education is a process of teaching, learning and training especially in schools, or colleges to improve knowledge and develop skills. (Oxford Advanced Learners Dictionary 2007). In sociological point of view, education is a philosophical as well as sociological concept, denoting ideologies, curricular, and pedagogical technique of inculcation and management of knowledge and the social reproduction of personalities and the culture (Oxford Dictionary of Sociology 2005). Also we can define education as a backbone or mover of development of human society. For instance, in advanced industrial societies like Britain, U.S.A, and France, education was provided by the state as a matter of right of all citizens and formal institutions, schools, colleges, and universities are organized for this purpose. They are staffed by full time professional practitioners, teachers, lecturers, and attendance at school is necessary and it is upheld by legal sanctions. Education is

provided free of charge up to secondary school level (Haralambos et al (2013). In Britain, it began in 1870 with Foster education Act by which the state assumed responsibility for elementary education and in 1880 school attendance up to the size of ten was made compulsory the Fisher Education Act of 1918 made school attendance compulsory up to the age of fourteen (Haralambos et al (2013). From the above illustrations it is clear that efforts are made by the policy makers toward educating their citizens so as to achieve national consciousness and social change.

Durkheim (French sociologist) saw the major function of education as the transmission of societal norms and values, he maintains that society can survive only if there exist among its members a sufficient degree of homogeneity, education perpetuates and reinforces this homogeneity by fixing in the child from the beginning of the essential similarities which collective life demands without these similarities cooperation, social solidarity and therefore, social life itself would not be possible (Durkheim n.d). Person in NTI and NOUN (2016) the American Sociologist argues that after primary socialization within the family, the school take over as the focal socializing agency; school acts as society as whole, preparing the child for his adult role. From all indications, education is inevitable for achieving national consciousness and Development.

National challenges

Challenges confronting Nigeria are nowadays numerous and well known by the citizens entirely. For the purpose of this paper, the under-listed were exposed:

- Security: along with this is insurgency in Borno, Yobe, Gombe where uncountable lives were lost and properties destroyed.
- Vandalization in Niger Delta area especially on pipe-lines.
- Kidnapping – this surrounded the whole country both north and south but largely in the northwest, as it is still happening in Zamfara, Katsina, Sokoto etc, and today, Kaduna is not left behind together with Niger state. Besides, arm robbery and young drug addicts engaged in seizing people's handsets have now become an old fashion rampant, and familiar.
- Economic: this is a well known Nigerian challenge e.g over 30 billion dollars had been borrowed from
 - i. International monetary fund (IMF)
 - ii. International Development Bank
 - iii. France
 - iv. Japan
 - v. India and
 - vi. Now china is on the process. (Express Radio News @7pm 26th September, 2021)
 - vii. Still on economy, devaluation of naira becomes a topic of discussion among Nigerians, as of 26/09/21 naira is 560 – 570 per dollar. (Express Radio News @7pm 26th September, 2021) Rise in the general price level has crippled the hopes of Nigerians for having the better life. For instance:
 - i. Cooking gas is now N600 per kg
 - ii. Kerosene N300 per liter and not available
 - iii. Formally units was (31)u N1000, now (20)n N1000
 - iv. All provision and food stuffs have gone high in which large percentage of Nigerians cannot afford three square meals.
- Corruption – Although, this government claims to have waged war against corruption, but former S.F.G David Lawal, Ibrahim Magu former EFCC boss, Abdulrasheed

Maina etc were not punished by this government. Issue on Mambila electrification, and all money, properties that this government claims to have collected or confiscated from corrupt Nigerians are yet to be publicized to the public. What is this? Doctors are nowadays took about (2) months on strike, ASUU previously took about one year on strike, issues of secession of Biafra and that of the Southwest is another threat etc.

Related Empirical Studies

Social studies as a value oriented discipline, attracted so many researchers and authors to investigate its potency or efficacy in solving all human problems. As a problem solving discipline and as it does with the totality of man's life, it can be used to minimize or solve social, political, economic, cultural, religious problems confronting group or society.

Below are some instances or researches previously made and exposing ways and manner through which social studies education aids to solve human problems.

Hussain, Faruk, and Salihu (2017) conducted research on the topic (refocusing of social studies). Here, the authors maintained that above could be achieved using (SOS – 124) man and his economic activities to engage all social studies students in one or two forms of self employments such as:

- i. Agriculture e.g
 - Crop farming e.g fruits, vegetables, kolanut, rubber etc
 - Animal husbandary/poultry
 - Small scale industries e.g food processing, animal feed processing, food storage, and preservation
- ii. Small scale manufacturing
 - Building materials
 - Wood work
 - Food and beverages
- iii. Services
 - Operating private schools
 - Transport services
 - Laundry services
 - Maintenance and repair of equipments
- iv. Trading
 - Consumable goods
 - Food
 - Textile
 - Machines etc

Secondly Abubakar (2015) had his research on the topic (Teachers and students opinions on the roles of social studies education toward eradicating girl child abuse in junior secondary schools in Kano state).

Although, in this writing the researcher did not expose or display how social studies education can do that, but the research has relevance with this research. Social studies education teaches family life education which aimed at exposing the duties of the individual members of the family and this creates humanity and sympathy in the mind of the members of the family so that they would not abuse or avoid any kind of abuse among themselves.

Finally, Otities (n.d.) has his writing on the topic (social studies education: A remedy to child-abuse in Nigeria). The author, here extracted or drew some values that social studies as a field of study inculcates in individuals e.g

Social studies education

- Cultivates in every individual especially the habit of parental care to our children.
- It helps society to be enlightened citizens to know the size of family that can be given adequate care without the neglect of any.
- The discipline trains us to develop and respect for the culture of a particular society etc. therefore, the gap between the three researches above and the present one is that, as the first deals with how social studies education can aid to provide job opportunities to students, and the other two were concerned with the social studies education in the midst of child abuse, the present one largely concentrated or capitalized on the efficacy and relevance of social studies education in the midst of national challenges.

Efficacy and relevance of social studies education in the midst of national challenges

Looking at the true picture of social studies education especially the literature and related empirical studies, one may with no doubt agree that social studies can serve the purpose and interfere into all societal problems and come up with or yield a reliable solution.

For instance, Mezieobi (2008) views social studies as citizenship education and a vehicle for human skills development, and it is the ecological studies as well as value laden field of study. The above impression connotes that, social studies helps to produce good citizens, teaches value, which can lead to nation building.

Olojobou (2007) maintained that social studies as a citizenship education inculcate in the Nigerian students awareness of their environment, national consciousness and national unity, and also promotes the understanding of the social problems within our society and finding possible solution. Since social studies inculcate national consciousness and national unity, then, if properly implemented it can yield solutions to all national challenges.

Bawa (2012) observed that in many nations of the world social studies aimed at achieving the following aims:

- a. Improvement of self-image of the people in the society after the colonial heritage.
- b. Initiation of people into learning of ways of improving the economy of their society.
- c. Enabling people, nations and government to develop global perspective regarding certain issues or problems as a result of recent international development.
- d. Development and maintenance of respect in interpersonal relationship.
- e. The transformation of political culture for the purpose of inculcating concept of nationalism, unity and interdependence among citizenry and new nations with diverse population. Taking into consideration the above statement social studies not only in Nigeria but in the whole world can interfere to sort out problems and yield productive solutions.

Otitie (n.d) outlined the under-listed as objectives of social studies in education in Nigeria:

- i. Inculcates in every individual especially parents the habit of parental care to our children.
- ii. It helps the society to be enlightened citizens to know the size of family that can be given adequate care without the neglect of any.
- iii. It teaches individual to appreciate care of children.
- iv. The discipline train us to develop respect and love for the culture of particular society.
- v. Social studies education trains us to recognize and become conscious of our children and therefore does not encourage the idea of broken-home.

- vi. The skills, value and right attitudes acquired through social studies education encourages us not to exploit our children commercially.
- vii. Thus, this discipline helps the society to develop objectives assessment of issue and problem and therefore cannot harass the girl child in Nigeria.

The Federal Ministry of Education (2007) conceptualized social studies education thus: as an area of curriculum designed specifically, for the study of man and how his problems are solved.

In line with the above, social studies education encompasses the under listed contents which if properly taught or implemented can yield suitable solutions to the national challenges:

- i. SOS – 225: Contemporary public issues a course that discusses various social problems and the way out of them e.g raping, corruption, kidnapping etc.
- ii. SOS – 222: Citizenship education – a course designed on the issues of citizenship, his rights, obligation, duties of government on its citizens etc.
- iii. SOS – 224: Law related education – a course in social studies that aims at exposing learners o how laws are making, law makers, law enforcement agencies, executives and judiciary.
- iv. SOS – 321: Population and family life education was designed to train learners on the issues of population and family life, how a family look like, members and their individual duties.

Finally, social studies also teaches drug education so as to prepare citizens or learners on how and why to use drug and together with the types of drugs and their side effect to our health and can help to reduce drug abuse among citizens.

Conclusion

Nigeria challenges are known, widely spread, worries the entire public, crippled and stagnated human activities. Hence, these challenges are no doubt social problems and needs or must be solved for a better Nigeria.

On the other hand, social studies is a value oriented discipline, problem solving subject, teaches citizenship education. Based on the above impression, this research concluded that, social studies education can suit to reduce or address national challenges if properly implemented.

Recommendations

Based on the analysis exposed by this paper, the under-listed were recommended:

- That social studies education should be implemented at all level of education since it is value oriented discipline, so that citizens should learn and acquire appropriate values that can aid to address national challenges.
- Government is to make effort to provide enough trained teachers, reading materials for social studies at all levels so that the message can reach the target.
- Good plan is to be made for people who do not go to school so that through enlightenment, using medias such as radio, T.V, social medias, newspaper etc so that some information such as desirable values, citizenship education, family life etc that social studies teaches can reach them at their homes, working places etc.
- Emphasis should be made on the issue of patriotism, nationalism so as to prepare people to love, protect and help their country all the time and where ever they are.

REFERENCES

- Abubakar M. (2015) Teachers and Students Opinion on the Role of Social Studies Education Towards Eradicating Girl Child Abuse in Junior Secondary School in Kano State. M.ed Project Department of Arts and Social Science Education, Faculty of Education, Ahmadu Bello University, Zaria.
- Arewa Radio News @6pm 14th August, 2021
- Bawa M. (2012) Influence of religious affiliation in the attitudes of junior secondary social studies students towards citizenship education in Niger state A.B.U Zaria. Unpublished M.ed thesis.
- Express radio (2021) Labaran Express 7:00pm (26/09/2021).
- Fadeyi O.J (2001) Social studies for Pre-NCE & NCE immaculate city publishers. Oyo state Nigeria.
- Federal Ministry of Education (2007). Special Teacher Upgrading Programme, Nigeria Certificate in Course Book Social Studies Year 1 Kaduna; National Teachers Institute.
- Haralambus, M (2013) Sociology times and perspectives. Published by Collins London.
- Hauwa, B. (2012); Impact of teachers attitude and experience in social studies pupils academic achievement in Kumbotso local area.
- Hussain M & Abubakar M (2016) An analysis of the Contributions of Religions Education Toward National Consciousness, Social Change and Development. A Paper Presented at SOSEAN Conference Northwest Chapter held at Sa'adatu Rimi College of Education Kumbotso, Kano. ABU Zaria, unpublished M.ed proposal.
- Hussain M. Ghazali, Faruk U.Y and Salihu S.M (2017) Refocusing of Social Studies Curriculum for Employment Generation. IIARD International Journal of Economics and Business Management Volume 3. No 5 Datta K.S Edit.
- Mezieobi Ken, et al (2003). Social Studies in Nigeria. Teaching Methods, Instructional Materials and Resources Acadapeak Publishers, Uroeri, Nigeria.4
- NTI (2000); Social studies cycle 1, Nigeria Certificate in Education Kaduna, National Teachers Institute.
- N.T.I & NOUN (2016) Bachelor's Degree Programme Manual. School of Arts and Social Sciences B.A (ed) Social Studies (First Semester) 100 level.
- National Commission for Colleges of Education, Abuja (2012) Nigeria Certificate in Education Minimum Standards for Arts and Social Science Education.
- Ololobou, C.O (2007). Practicum for NERDC National Curriculum for Social Studies. In Kediri et al.
- J. O Okogu (n.d) Social Studies Education: A Remedy to Child-Abuse in Nigeria. Oxford Advanced Learners Dictionary (2007) New 7th edition
Oxford dictionary of sociology (2005) New York
Oyinkepreye, O.C. (n.d). Methodological Approaches in Social Studies Education.

METALWORK TECHNOLOGY TEACHERS COMPETENCY NEEDS FOR TEACHING IN GOVERNMENT TECHNICAL COLLEGES IN KATSINA STATE, NIGERIA

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Abstract

The study determined on the Competency Needs of Metalwork Technology Teachers for Effective Teaching in Government Technical Colleges in Katsina State, Nigeria. Two research questions were raised and two hypotheses were formulated, tested at 0.05 level of significance. A survey design was employed for the study; the accessible population for this study was 97 respondents, consisting of 22 metalwork teachers, 21 technical college administrators and 54 metalwork industrial technicians. A structured questionnaire consisting of 32 items was developed for the study. The instrument was validated by three experts from department of Industrial and Technology Education, Federal University of Technology Minna, Niger State, Nigeria. The reliability coefficient of the instrument was 0.93 using Cronbach Alpha Coefficient. Mean and Standard deviation were used to answer the research questions while z-test statistics was used to test the null hypotheses at 0.05 level of significance. The findings of the study revealed that metalwork technology teachers need all the psychomotor skills in basic machining processes and all the Information and Communication Technology (ICT) competencies identified. The study recommended that Ministry of Science, Technology Education and Innovations, should collaborate with modern metalwork industries in order to train the Metalwork teachers on recent psychomotor skills in basic machining Processes, the study further recommended that technical colleges should be equipped with ICT facilities and metalwork teachers should be adequately trained on how to use these gadgets for adequate lesson delivery in the schools.

Key words: Competency Needs, Metalwork Technology Teachers, Government Technical College.

Introduction

There is an increasing concern towards the academic competence of technical teachers in the recent years. One proof of concern has been the general out-cry about the fallen standard of education in Nigeria. Teachers play an indispensable role in any educational system and should be adequately equipped with relevant skills and competencies; this is because the ability of teachers to perform their functions is dependent on the quality of learning they were able to acquire. It has been observed that a nation's economic growth and the living standard of its people can be positively influenced by the quality and quantity of its human resources. Aminu and Yakubu (2015) defines competency as the ability of an individual to perform an action to standard. This means that for a technology teacher to be rated as competent he/she must possess all the qualities that make one to achieve the expected outcomes. Ali (2018) revealed that teacher's competencies are important phenomenon in determining the success or failure of the educational programmes.

Technical and Vocational Education Teacher is a professionally trained person charged with the responsibilities of imparting knowledge and skills through teaching of theory and practical subjects in the classroom and laboratory/workshop for the production of skilled,

self-reliant and enterprising craftsmen and technicians who can apply their technical knowledge and skills necessary for solving their personal and national problems. (Yalams 2012). Similarly, Ali (2012) opined that Technical and Vocational Education Teachers must be equipped with psychomotor skills, pedagogical knowledge and methodology of teaching technical subjects.

The overall goal of quality teaching in technical education is to improve opportunities for high quality learning which is evaluated through performance. Federal Republic of Nigeria (FRN, 2004) categorically stated that “no education system can rise beyond the quality of its teachers”, this point to fact that teachers are central to achieving any educational goal. They are therefore faced with the task of imparting skill and knowledge to the students. FRN (2013) stated three main goals of technical colleges, namely : to provide trained manpower in applied sciences, technology and business particularly at craft, advanced craft and technical level; provide the technical knowledge and vocational skills necessary for agricultural, commercial and economic development; and give training and impart the necessary skills to individuals who shall be self-reliant economically (FRN, 2013). In pursuance of these goals, trainees completing technical colleges have three options: secure employment at the end of three years course with employable skills obtained, set up their own business and become self-reliant and be able to employ other people, or pursue further technical education programmes in technical tertiary institutions.

Metalwork technology as one of the core technical subjects offered in the technical colleges in the country needs a lot of skill training. Its teachers need to be retrained in order to meet its immediate objectives and cope with societal changes. Metalwork technology teachers need to be competent in several areas such as: psychomotor skills, as well as Information and Communication Technology (ICT) skills. Evidences from literatures reviewed indicate that some of the Metalwork technology teachers are lacking the pre-requisite skills in one or more areas mentioned above, (Ololube, 2006). These in-competencies hinder the successful implementation of metalwork curriculum.

According to Yakubu (2014) “Metalwork Technology Teachers are required to possess the pre-requisite qualification of both manipulative skills and other theoretical knowledge to carry out duties effectively”. This is because metalwork subject by its nature requires the establishment of uniformity of technical procedures, working condition of tools and equipment, work place arrangement, operations and motion sequences, consumables and non-consumable materials, quality requirements and similar factors.

Bello (2016) opined that “Metalwork Technology Teachers are required to centre their experiences towards the performance of certain task. These activities are characterized by conducting several actions such as monitoring the student progress in constructing, repairing, assembling and solving other technical problems”. All these practical skills involve the application of psychomotor domain of educational objectives. One cannot be able to determine the extent of competency without evaluating the achievement of objectives of the lesson, identifying short comings, and trying to correct the mistakes.

Psychomotor skills are very necessary if the metalwork craftsmen are to practice their trade and become self-reliant upon graduation. Psychomotor skill entails the ability to practical use of hands and brain to perform practical task with the hands, computer or machines (Ekpenyong, 2005). Metalwork technology students are expected to learn contemporary metal joining, cutting, welding processes, as well as other machining operations used in

manufacturing and fabricating industries. Metalwork students must be able to work with cast iron, aluminium, as well as other metals and their alloys. These can only be possible if Metalwork teachers in technical colleges have high level of competence to develop the mental and physical capabilities of students thereby increasing their skills, knowledge and attitude required for utilizing the natural resources for economic development of the nation and for their own self-improvement.

ICT can be identified as an innovation in teaching and learning through gathering, storing, retrieving, processing, analysing and transmitting of information. It involves the use of a wide range of technology facilities such as: internet, Video Conferencing, Digital Camera, Telephone, Computer, Satellite, Telex, Fax, Radio, Television, Software packages, and Bulletin boards among other things. According to Ikemelu (2015) ICT have been accepted and use as new method of teaching and learning in our schools which provides an opportunity to gain access to more information and experience through global network and enhanced student understanding since it has the capacity of increasing and sustaining the interest of students in the teaching and learning process. This assertion is in line with Asongo (2012) who maintained that ICT provides both learners and teachers with up to date information in their field of study for successful delivery in a class, it also brings latest scientific and technological discoveries and research reports closer, all over the world. By considering these facts and contributions of various authors, this research is set to identify the competency needs of metalwork technology teachers for effective teaching in Government Technical Colleges in Katsina State.

Statement of the Problem

It is expected that the metalwork graduates of technical colleges should possess competencies that will enable them practice their trade adequately, secure job or further their education upon graduation. Unfortunately most of the metalwork graduates lack some of the competencies required for employment or for further education. Sulaiman and Akeem (2014) reported that technical colleges' product are weak in practice of their trades. According to them "the standard of performance of Nigeria craftsmen in general is at the moment very low thereby retarding the overall productivity of the Nigerian economy".

Ololube (2006) found that the problems faced by educational administrators in the implementation of vocational education programmes in Nigeria include, among other things, incompetent technology teachers. He further revealed that "the engagement of unqualified teaching staff in Nigerian schools including technical colleges has an undoubtedly negative and unpleasant effect on student performance in technical school examinations". He further revealed that poor quality of teaching staff is responsible for the poor quality skill acquisition in technical colleges.

Technological development has prompted the metalwork industries to seek well trained metalwork craftsmen to support the complex computer driven machining systems and to efficiently apply sophisticated machining technologies (Cary, 2004). Howard and Zurich (2004) observed that today's metalwork industries require skilled metalwork craftsmen capable of handling troubleshooting, controlling complex interrelated mechanical and electronic control systems and equipment to enhance production and impart these necessary skills to technical college students. However in Nigeria, poor teachers competence in psychomotor skills, and ICT areas, have created a skill deficient gap in both work place and technical colleges. It is against this back drop this research is set to identify the competencies

needed by the metalwork technology teachers for effective teaching in technical colleges in Katsina state Nigeria.

Aim and Objectives

The aim of the study was to determine the metalwork technology teachers competency needs for effective teaching in technical colleges in Katsina States, Nigeria. Specifically the study intended to identify the:

1. Psychomotor skills needed by the metalwork technology teachers in basic machining processes in technical colleges of Katsina States, Nigeria.
2. Information and Communication Technology competencies needed by the metalwork technology teachers in technical colleges of Katsina States, Nigeria.

Research Questions

The study provided answers to the following questions:

1. What are the psychomotor skills needed by metalwork technology teachers in basic machining processes?
2. What are the Information and Communication Technology skills needed by metalwork technology teachers?

Hypotheses

The following null hypotheses were formulated to guide the study tested at 0.05 level of significance.

- H₀₁: There is no significant difference in the mean responses of metalwork teachers and metalwork industrial technicians on psychomotor skills needed by metalwork technology teachers in basic machining processes.
- H₀₂: There is no significant difference in the mean responses of metalwork teachers and technical college administrators on information and communication technology skills needed by metalwork technology teachers.

Research Methodology

A survey design was employed for the study, the study was conducted in all the technical colleges that offer Metalwork technology and Seven (7) Metalwork industries in Katsina State, Nigeria. The accessible population for this study was 97 respondents, which consists of 22 metalwork teachers, 21 technical college administrators and 54 metalwork industrial technicians. A structured questionnaire consisting of 32 items was developed and used for data collection during the study.

The questionnaire was divided into three sections A-C, section A was designed to elicit personal information of the respondent, while section B and C covers items on research questions 1 and 2, respectively. Five point rating scale of measurement was used for section B and C, with response options of Highly Needed (HN), Moderately Needed (MN), Needed (N), Fairly Needed (FN), Not Needed (NN). The weight values assigned to the response options were 5,4,3,2 and 1 respectively. The instrument was validated by three experts from department of Industrial and Technology Education, Federal University of Technology Minna, Niger State, Nigeria. The reliability coefficient of the instrument was 0.97, using Cronbach Alpha coefficient. The data collected was analyzed using mean, standard deviation and z-test. Mean and standard deviation were used to answer research questions while z-test was used to test the two null hypotheses at 0.05, level of significance. All statistical analyses were carried out using statistical package for social sciences (SPSS).

Results

Research Question One:

What are the psychomotor skills needed by metalwork technology teachers in basic machining processes?

Table 1: Mean ratings of the responses of Metalwork Teachers and Metalwork Industrial Technicians on the psychomotor skills needed by Metalwork Technology Teachers in basic Machining Processes.

S/N	ITEMS	N ₁ = 22		N ₂ = 54		S _a	Remark	
		\bar{x}_1	S ₁	\bar{x}_2	S ₂			\bar{x}_a
1	Ability to: Set the proper cutting speeds and feeds on the machine tools.	4.24	.91	4.33	.47	4.49	.69	Needed
2	Set up job on the lathe using digital electronic comparator.	4.02	.87	4.57	.53	4.23	.60	Needed
3	Perform alignment test for different machine.	4.00	.86	4.43	.73	4.22	.79	Needed
4	Mount steadies, jigs and fixtures on machines.	4.02	.87	4.43	.40	4.23	.68	Needed
5	Perform eccentric turning on the lathe.	4.02	1.09	4.33	.63	4.18	.86	Needed
6	Mount vertical head attachment to horizontal milling machine.	4.10	.91	4.34	.61	4.22	.76	Needed
7	Machining jobs using dividing heads/indexing plates.	4.05	.96	4.60	.55	4.33	.76	Needed
8	Perform basic milling operations.	4.19	.77	4.27	.59	4.23	.68	Needed
9	Grind tapers set between centers on the universal grinder.	4.14	.95	4.46	.61	4.30	.78	Needed
10	Perform grinding operation using sensitive grinding machine.	4.12	.97	4.19	.57	4.16	.77	Needed
11	Use of multi-spindle drilling machine for drilling operations.	4.02	1.07	4.66	.54	4.34	.80	Needed
12	Prepare flat and plane surfaces on shaping machine	4.10	.82	4.13	.66	4.12	.78	Needed
13	Cutting slots with shaping machine.	4.19	.80	4.37	.52	4.28	.66	Needed
14	Perform machining operations using horizontal/ vertical milling machine.	4.05	.94	4.26	.60	4.16	.82	Needed
15	Perform different operations on lathe machine, such as: facing, boring, knurling.	4.14	1.00	4.97	.17	4.56	.59	Needed

KEY:

\bar{x}_1 = Mean responses of Teachers \bar{x}_2 = Mean responses of Administrators

N₁ = Number of Teachers N₂ = Number of Administrators

S₁ = Standard Deviation of Teachers S₂ = Standard Deviation of Administrators

\bar{x}_a = Mean average S_a = Standard Deviation average

The data presented in Table 1 shows that all the 15 items mentioned as psychomotor skills in basic machining processes are considered needed according to the opinion of the respondents. Only 2 items were identified as highly needed (HN), while 13 other items were identified as moderately needed (MN) with an average mean rating ranging from 4.12 to 4.56 by the respondents. The Table revealed that the average standard deviation of the items ranging from 0.59 to 0.86. The result revealed that the respondents were not far from the mean and not far off-from one another in their response opinion.

Research question two

What are the Information and Communication Technology skills needed by metalwork technology teachers?

Table 2: Mean ratings of the Responses of Metalwork Teachers and Technical College Administrators on Information and Communication Technology skills Needed by Metalwork Technology Teachers. $N_{1=22}$ $N_{2=21}$

S/N	ITEMS	\bar{x}_1	S_1	\bar{x}_2	S_2	\bar{x}_a	S_a	Remark
16	Ability to: Operate projectors and other instructional media effectively.	4.31	.84	4.25	.67	4.28	.76	Needed
17	Source appropriate information from websites organize them for students using book marks or hyperlinks within an instructional document.	4.17	.60	4.91	.53	4.54	.61	Needed
18	Developing graphic organizers for students use on multi-media and digital video presentation.	3.93	.92	4.16	.67	4.05	.70	Needed
19	Create templates (Microsoft word, Microsoft excel, power point, and publisher).	4.00	.99	4.28	.63	4.14	.81	Needed
20	Utilize digital facilities in seeking information.	4.21	.75	4.34	.55	4.28	.65	Needed
21	Provide ICT supported learning opportunities for students.	4.19	.89	4.41	.67	4.30	.78	Needed
22	Utilize basic information and communication technology (ICT) skills in solving educational problems.	4.29	.74	4.25	.67	4.27	.71	Needed
23	Have necessary skills for using ICT effectively in teaching profession.	4.36	.73	4.72	.52	4.54	.63	Needed
24	Have ICT pedagogic/didactic competence.	4.10	.85	4.31	.59	4.21	.72	Needed
25	Utilize ICT in transferring knowledge and skills into administrative dimensions.	4.19	.71	4.66	.55	4.42	.63	Needed
26	Use advanced technology in educational practices and help students to develop new view points.	4.19	.74	4.31	.54	4.25	.64	Needed
27	Use augmentative system to help persons with disabilities communicates.	3.93	.95	3.59	.71	3.76	.83	Needed
28	Use Computer assisted learning/research such as: information retrieval, applets, and other simulations in teaching-learning situation.	4.12	.83	4.16	.77	4.12	.70	Needed
29	Use digital libraries and online data base in finding information.	4.24	.88	4.47	.67	4.36	.77	Needed
30	Use computer package to support practical policy making.	4.14	.87	4.22	.71	4.18	.79	Needed
31	Utilize Computer Supported Laboratories in practical teaching.	4.19	.80	4.41	.62	4.30	.76	Needed
32	Possess ICT learning metacognition.	4.12	.77	4.19	.69	4.16	.73	Needed

The data presented in table 2 indicates that all the 17 items had their means ratings above the criterion mean of 3.0. This implies that all the proposed 17 competencies in Information and Communication Technology are needed by Metalwork teachers for effective teaching in Technical Colleges of Katsina state, according to the perception of the respondents. The Table also revealed that the items had their mean average ratings ranging from 3.76 to 4.54 and average standard deviation ranging from 0.61 to 0.83. This implied that the respondents were not distant from the mean and not far away from one another in their opinion.

Hypothesis One:

H_{01} : There is no significant difference in the mean responses of metalwork teachers and metalwork industrial technicians on psychomotor skills needed by metalwork technology teachers in basic machining processes. The data that answered hypothesis two were presented in the table 3.

Table 3: z-test Analysis of the Mean Responses of Metalwork Teachers and Metalwork Industrial Technicians on Psychomotor skills Needed by Metalwork Teachers in basic Machining Processes in Technical Colleges for Effective Teaching.

Respondents	N	\bar{x}	SD	Df	z- Value	Sig-2tailed
Teachers	22	4.12	.97	74	-1.97	.05
Technicians	54	4.92	.57			

KEY: N= Number of respondents, \bar{x} = Mean responses

SD= Standard Deviation, Df=Degree of freedom= $N1 + N2 - 2 = (22+54-2)=74$

z-value= z-calculated value, Sig-2tailed = level of significance

The result presented in table 3 have shown that mean responses of the metalwork teachers and metalwork technicians are 4.12 and 4.92 respectively, with regard to their opinions on the psychomotor skills needs in basic machining processes. The analysis revealed that the z-value of -1.97 is less than 0.05. This revealed that there is no significant difference in the mean responses of the metalwork teachers and metalwork technicians, on the needed psychomotor skills in machining processes. The null hypothesis was therefore retained.

Hypothesis Two:

H_{02} : There is no significant difference in the mean responses of metalwork teachers and technical college administrators on ICT competencies needed by metalwork technology teachers. The data that answered hypothesis two were presented in the table 4.

Table 4

z-test Analysis of the Mean Responses of Metalwork Teachers and Technical College Administrators on the Information and Communication Technology skill Competencies Needed by Metalwork Teachers in Technical Colleges for Effective Teaching.

Group	N	\bar{x}	SD	Df	z- Value	Sig-2tailed
Teachers	22	4.00	.99	41	-1.99	.05
Administrators	21	4.28	.63			

The result presented in table 4 revealed that the mean responses of the metalwork teachers and technical college administrators are 4.00 and 4.28 respectively with regard to their opinion on the needed Information and Communication Technology skills by the metalwork teachers. The analysis revealed that the z-value of -1.99 is less than 0.05. This suggests that there is no significant difference between the metalwork teachers and technical college administrators in respect to ICT, skill needs by the metalwork teachers for effective teaching in technical colleges. The null hypothesis was therefore retained.

Findings of the Study

Based on the information collected and analyzed, the following findings emerged:

- 1 The respondents agree that two out of (15) items established on psychomotor skills in basic machining processes, such as, ability to: (set proper cutting speed and feed on

the machine and perform different operations on lathe machine), were identified as highly needed (HN) by the metalwork teachers, other thirteen items were identified as moderately needed (MN). This includes perform alignment test for different machines, mount steadies, jigs and fixtures on machines, set proper cutting speed and feed for machine tools, cutting slot with shaping machine, and perform basic milling operations among others,

- 2 The respondents agree that out of (17) items listed on ICT skill needs, two items, ability to: (source appropriate information from website and organize them for students using book mark, as well as, have necessary skill for using ICT effectively in teaching profession) were identified as highly needed (HN) by metalwork teachers according to the perception of respondents. Other fifteen items were identified as moderately needed (MN) by the metalwork teachers, this includes, Operate projector and other instructional media effectively, developing graphic organizers for students, use of multi-media and digital video for presentation, Use computer to support practical policy making, use of augmentative system to help persons with disability communicate, and use digital libraries and online data base in finding information among others.
- 3 There is no huge distinction on the opinion of metalwork teachers and industrial metalwork technicians on the competencies needed by Metalwork teachers in psychomotor skills in machining process, therefore null hypothesis was accepted.
- 4 There is no huge distinction on the opinion of metalwork teachers and technical college administrators on the competencies needed by Metalwork teachers on the Information and Communication Technology skills, therefore null hypothesis was retained.

Discussions of the findings

The findings from Table 1 in the area of psychomotor skills in basic machining processes, revealed that all the fifteen items listed as competencies were accepted by Metalwork teachers and industrial technicians. This indicates that the Metalwork teachers must possess competencies in terms of both manipulative and practical skills needed in metalwork shop.

This finding was in agreement with the Ekpenyong, (2005) which maintained that psychomotor skills are very necessary if the metalwork graduates are to practice their trade and become self-reliance upon graduation. Metalwork technology students are expected to learn contemporary metal joining process, cutting, welding processes, as well as other machining operations used in manufacturing and fabricating industries. This can only be possible if metalwork teachers in technical colleges have high level of psychomotor skills. This will enable them to develop the mental and physical capabilities of students thereby increasing their skills, knowledge and attitude required for utilizing the natural resources for economic development of the nation and for their own self-improvement.

The findings of the study in are in line with Atsumbe (2002) who pointed out that “an average technology teacher should be able to provide correct occupational information to the students”. This is because career is concerned with the preparation of students for successful work life by improving the basis for their career choice and facilitates the learning of job skills. This means that the Metalwork teachers need competencies in psychomotor skills in basic machining process for effective lesson delivery in schools.

The value of z-test analysis on the psychomotor skills area in basic machining processes revealed that there was no significant difference on the opinion of the metalwork teachers,

and metalwork industrial technicians on the competencies needed by Metalwork teachers in psychomotor skills in basic machining processes. Therefore the null hypothesis was retained. This indicates that the respondents have agreed with all the items on psychomotor skills in basic machining processes mentioned.

The finding from the table 2 on competencies needed by Metalwork teachers on ICT revealed that all the seventeen items listed as competencies were needed by metalwork teachers. Competencies like ability to operate projectors and other instructional media effectively, ability to source appropriate information from website, creating templates(Microsoft word, Microsoft excel, power point, and publishers), providing ICT support learning opportunities for students, using digital libraries in finding out information, using computer package to support practical policy making, using computer supported laboratories in practical teaching are needed according to the responses of the respondents. This indicates that metalwork teachers need competencies in handling and using the Information and Communication Technology gadgets for effective teaching.

This was in line with findings of Miller (2011), which revealed that Information and communication technology (ICT) is affecting education in a dynamic ways and the momentum is irreversible, Information and Communication Technology (ICT) programmes has been incorporated in all teacher training programmes, Technical College teachers may use ICT as teaching and learning tool to harness the advantages of educational delivery. The virtual library as a platform for sharing knowledge is aimed at rejuvenating Nigerian schools through the provision of current books, journals, and other information resources using digital technology.

This call for retraining of Metalwork teachers so as to equip them with the recent needed skills for utilizing ICT in order to enhance teaching and learning process. More so, Hackett (1979) pointed out that the purpose of retraining is a means of improving the present job performance. There should be a constant retraining of Metalwork teachers in order to update their knowledge and skills for effective discharge of their duties both in the metal workshop and classroom.

However, z-test analysis on the Table 4 revealed that there was no significant mean different between Metalwork teachers and technical college administrators on the ICT skills needs by the metalwork teachers for effective teaching in technical colleges. Therefore the null hypothesis was retained and indicated that the respondents have agreed with the skills stated.

Conclusion

It is obvious that to achieve the aim and objectives of metalwork technology programme in Technical Colleges, emphasis should be placed on teacher competencies. It is only through effective teaching and learning that requires the use of quality metalwork teachers who are competent in psychomotor skills in basic machining processes and ICT areas, that aim and objectives of metalwork programme in technical college can be achieved. The study identified the competencies needed by metalwork teachers to bridge the gap that exist between the practical and classroom management skills for effective teaching and learning in technical colleges of Katsina state, Nigeria.

Recommendations

Based on the findings of this study, the following recommendations were made:

1. Ministry of Science and Technology should collaborate with modern metalwork industries in order to train the metalwork teachers on psychomotor skills in basic machining processes.
2. Technical colleges should be equipped with Information and Communication Technology facilities, and metalwork teachers should be adequately trained on how to utilize these gadgets for effective lesson delivery in the schools.

REFERENCES

- Ali I.(2012). The Influence of Teaching Approaches among Technical and Vocational Education Teachers Towards acquisition of Technical Skills in Kano State. *Journal of Education and Practice*. 3 (16), 160-165.
- Ali L.B. & Danladi I.(2018). Adequacy and Competency Needs of Block laying and Concreting Teachers (BCT) for Skill acquisition at Technical Colleges in a Depressed Economy. *Bayero Journal of Science, Technology Education, and Mathematics Education (BAJOSTME) 1 (1)*.
- Aminu T.U. & Yakubu S. (2015). Assessment of the Teaching Competencies of Technical Teachers in Technical Colleges in Gombe State, Nigeria. Unpublished M.Ed Theses Department of Technology and Science Education Federal University of Technology Yola, Adamawa State, Nigeria.
- Asongo A.A (2012). An assessment of Resources for Effective Teaching and Learning of Computer Science in Secondary Schools In Kwande Local Government of Benue State, Unpublished PhD, Thesis Federal University of Agriculture Makurdi, Nigeria.
- Atsumbe, B. N (2002). Towards Effective Teaching of introductory technology in the JSS (problems & solutions). A paper presented at the 1st National conference of Nigerian Association of Teachers of Technology, Niger state chapter on 15th – 18th June 2002.
- Bello H. (2016).Competency Needs of Metalwork Teachers for Effective Teaching in Government Technical Colleges in Katsina and Kano States, Nigeria. Unpublished M.Tech. Thesis, Department of Industrial and Technology Education, Federal University of Technology Minna, Niger State, Nigeria.
- Cary, H. B.(2004).The Importance of Being a Welder. *Welding Journal*, 73(10): 59-67.
- Ekpenyong, L.C (2005). *Foundations of Technical and Vocational Education Evolution and Practice*. Benin: Ambik Press Limited.
- Federal Republic of Nigeria, (FRN, 2004). *National Policy on Education*, Lagos: National Education Research and Development Corporation (NERDC) Press.
- Federal Republic of Nigeria, (FRN, 2013). *National Policy on Education*, Lagos: National Education Research and Development Corporation (NERDC) Press.
- Hackett, P. (1979). *Success in management: Personnel*. London: John Murray Publishers Limited.
- Howard, A. & Zurich, B.(2004). Industry Leaders Look into the Future. *Welding Journal*, 73(6): 49-54

- Ikemelu, C.R (2015). Towards effective application of ICT education for Classroom Curriculum Delivery: Science Teacher Perspective STAN Conference Proceedings, pp 230-238.
- Miller, A. (2011). Technical College Teachers in Nigeria, Problems Issues and Challenges. *Mediterranean Journal of Social Sciences*, 2 (7), 57-58.
- Ololube, N.P (2006). Teacher Education, School Effectiveness and Improvement: A case Study of Academic Professional Qualification on Teachers job Effectiveness In Nigeria Secondary Schools. *Doctoral Dissertation, University of Helsinki, Press*.
- Sulaiman, A & Akeem U. (2014). Competencies Required by Technical Drawing Teachers in Technical Colleges: *Journal of Research and Methods in Education* 4 (2) 32-37
- Yakubu, B. (2014). The Need for Competency In Metal Work Technology In Nigerian Technical Colleges. *Journal of Emerging Trends In Educational Research and Policy Studies.(JETERAPS)*, 5 (8), 153-154
- Yalams S.M.(2012). Project Construction and Evaluation in Technology Education. Unpublished Lecture notes Department of Vocational and Technical Education, Abubakar Tafawa Balewa Bauchi, Bauchi State, Nigeria.

**ENHANCING INFORMATION LITERACY SKILLS TOWARDS UTILIZATION OF
ONLINE DATABASES AMONG UNDERGRADUATES OF THE FACULTY OF
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habibzainab710@gmail.com**Abstract**

The main objective of this study is to investigate the information literacy skills possessed by undergraduates of law towards utilization of online databases in Bayero University, Kano. (BUK). Quantitative methodology using descriptive survey design was adopted for the study as a guide for data collection from a population of a head of law library and registered undergraduate law students in BUK. The Isreal (1993) formula was used to determine 291 out of 1,071 undergraduate law students as the sample size. Validated questionnaire with cronbach's alpha value of 96% (i.e., $r = 0.96$) was randomly administered to 291 sampled students, while semi structured interview was conducted with the head of law library in BUK. Data were analyzed using frequency counts and percentage in tabulation format with the aid of SPSS Version 23. Findings of the study revealed that, online databases available to undergraduate law students in BUK are of two categories: (i) General [JSTOR, Springer, Oxford Press Online Journal, Ebscohost, Emerald and ProQuest; (ii) Specific for Law (Law Companion, Hein Online, and LexisNexis); the students possessed high level of information literacy skills in their ability to identify the need to use online databases; to construct search strategy to locate general and legal databases; to evaluate the online databases; to use the databases to meet their information need; and to cite online legal information resources; the students indicated low utilization of both general and Specific online databases; challenges found were, irregular subscription of online databases by the management and poor ICT facilities to utilize online databases. The study recommends the the need for the provision of effective and efficient information literacy skills to undergraduates of law through the collaboration of faculty staff and the law librarian.

Keywords: *Information Literacy Skills, Online Databases, Undergraduate Law Students, Utilization of Online database.*

Introduction

As users of information, undergraduate law students are faced with diverse and abundant resources in their pursuit of knowledge because of the complexity of legal information sources and formats. Osunrinade (2018) observed that information sources available in an

infinite amount which makes it imperative for individuals to develop a greater understanding of information sources and needed abilities to acquire, evaluate, use and communicate information. Subsequently, Akpovire, Olawoyin, Adebayo and Esse (2019) acknowledged information literacy skills as essential tools for undergraduates to have full understanding of course content and expand their knowledge beyond the classroom. Evidently, undergraduates who lack adequate information literacy skills could not go far in their academic or career pursuit. Banik and Kumar (2019) asserted that with adequate information literacy skills, undergraduates' academic performance would be improved significantly and which could contribute to the national development.

Therefore, it is important for undergraduate law students in Bayero University Kano to acquire information literacy skills in order for them to be able to identify relevant legal information resources and locate them in the library, to critically and systematically evaluate the quality of the information within the identified resources, to write and present better assignments and to conduct research at the end of their study independently. That is, information literacy skills enable law students to effectively and efficiently use the available electronic information resources in the library. This is supported by Olorunfemi (2014) who emphasized that, law students require information literacy skills to effectively access and use online databases in order to cope with the workload of their academic activities.

Online database according to Alhassan and Afolabi (2012) is a huge file of digitized information that is usually updated regularly. Found in such a file includes bibliographic records, full-text documents, statistical records, abstracts, directories, images, etc. that are connected to definite subject areas. The records which by design are in standard and uniform formats are organized to ease retrieval. Databases in electronic formats are organized and administered with the help of Database Management System software (DBMS). It is customary for producers of databases to produce versions in print to be leased to vendors that will ensure access after the data has been transformed into machine readable form through proprietary search software.

The utilization of various types of legal information resources, both print and electronic, allows for access to a wide variety of information which is essential for scholarly activities. Utilization of online information resources in law libraries is the process through which online legal databases are used. It is the maximum usage of online legal data bases since it is expected that all types of legal information resources available in law libraries should be encouraged to be utilized.

Online databases are utilized by undergraduates (law students included) for several academic purposes. These purposes according to Sahabi and Omagbon (2020) include: doing class assignments, writing term papers, augmenting class works, retrieving current literature for studies, following blog discussions on the subject area of interest, searching for scholarship opportunities, searching for internship placement and for research purposes. However, Nisha (2013), found that users of their library used online databases because of the currency of e-journals' articles and rich content of information resources. Hence, they require adequate information literacy and skills so as to maximize effective utilization of legal information resources.

In order to carry out this research, quantitative methodology using descriptive survey design was adopted as a guide for data collection from a population of 1,071 registered undergraduate law students and head of law library, BUK. The Isreal (1993) formula was

used to determine 291 undergraduate law students as the sample size of the study. Validated questionnaire with cronbach's alpha value of 96% (i.e., $r = 0.96$) was randomly administered to 291 sampled students while semi structured interview was conducted with the head of law library in Bayero University Kano.

Problem Statement

The importance of information literacy skills cannot be overemphasized as they equip students and practitioners with valuable insights which guarantee quality academic and research outputs, capable of expanding career opportunities in the burgeoning information economy. Similarly,

Online databases are valuable tools for study, learning and research. They provide many advantages over traditional print-based resources as they contain current information because, they are updated frequently.

However, the use of Online databases has instigated several research studies worldwide, such as that of Okiki (2016), Akhilomen, Oluwatoyin and Osezua (2020) etc, most of them addressed such issues that concern access, awareness, attitudes, satisfaction, and searching skills; while others also specifically focused on information literacy skills as correlate to the use of online databases. Several scholars such as Oyinyechi (2016) and Yusuf (2016) in their studies suggested that additional research should be focused more on target groups of users within the academic community to have a balanced and clearer insight into the utilization of electronic information resources among the selected group.

At the time of this study, the Faculty of Law, Bayero University, Kano hosts a library that organizes information-bearing resources, including a variety of online databases for law lecturers and students. As preliminarily observed by the researcher, the undergraduates of law in Bayero University, Kano, are active users of the library. They are always in quest of legal information resources from both primary and secondary sources. Despite their frequent use of the library resources, it seems that, a linkage between their information literacy skills particularly with regards to the use of online legal databases is uncertain. It therefore becomes necessary to assess the undergraduate student's use of the databases, and their information literacy skills possessed for effective utilization of legal information resources.

Objectives of the Study

The main purpose of the study is to investigate the information literacy skills possessed by undergraduates of law for the use of online databases in Bayero University, Kano. Specifically, the objectives are:

- 1) To determine the information literacy skills possessed by undergraduates of the faculty of law for utilization of Online databases in Bayero University, Kano.
- 2) To find out the types of Online databases available at the faculty of law library, Bayero University, Kano.
- 3) To identify the types of online databases utilized by undergraduates of law in Bayero University, Kano.
- 4) To find out the challenges affecting utilization of online databases by undergraduates of law in Bayero University, Kano.

Review of Related Literature

The library profession has long worked to promote the knowledge and skills necessary to be effective consumers of information. The development of Information Literacy (IL) competencies among the library users and throughout the society has become a vital

requirement to face the challenges of the 21st century. Information literacy is the ability to define one's information needs and then to access, evaluate, process and use retrieved information strategically. Julien (2001) defined information literacy as the ability to make efficient and effective use of information sources. Information literacy includes having the skills to not only access information, but also to ascertain its veracity, reliability, bias, timelines, and context.

Hepworth (2015) described information literacy as a concept that is relevant in all disciplines with the term being widely used across various disciplines. The most extensively used definition of information literacy is that provided by the American Library Association (ALA) (Association of College and Research Libraries 2016), which states that information literacy is the ability to recognize when information is needed, to locate, evaluate, and use effectively the needed information. Information literacy skills empower undergraduates to become lifelong learners. Information literacy skills in the context of this study could therefore be regarded as an instrument for undergraduates' empowerment to enhance abilities to determine information need, access, evaluate, use information and understand legal, ethical and economic issue of information use.

IL is important in the contemporary environment of rapid technological change and proliferation of information resources. Information and communication technology (ICT) advancements and the use of electronic resources, especially the internet promises to improve the flow of information to research and academic communities (Ani & Ottong 2010). Lwoga (2014) mentioned that information literacy has developed to address the requirements generated by these overload or explosions, the complexity, the needs of information society for competent information consumers, and to meet the requirements of the knowledge economy for a responsive and informed workforce. In other words, information literacy skills empower the people with the critical skills which will help them to become independent lifelong learners. These skills will enable people to apply their knowledge from the familiar environment to the unfamiliar. Oyedapo and Akande (2020) carried out a survey in south western Nigeria, found that the information literacy skills of the undergraduates in federal universities in southwestern Nigeria is relatively high, since overall mean (3.25) is higher than criterion mean (2.50). Akhilomen, Oluwatoyin and Osezua (2020) found that, law lecturers' level of information literacy oscillated between 'very high extent' and 'high extent' with 100% of the responding lecturers being able to evaluate internet sources to a very high extent due to the availability of electronic databases in the Ambrose Alli University.

Online databases have become a critical part of the learning environment particularly in the higher education as it brings tremendous benefits to organizations and individuals to perform their work more efficiently. They are widely available to library patrons in the entire world, and many patrons can tap into these databases from their computers or electronic devices anywhere in the world. These resources according to Sahabi and Omagbon (2020) include all types of digital collections in the form of online databases, e-books, electronic journals, the Online Public Access Catalog (OPAC) and the Internet. While, Bell (2009) classified online databases into all subject electronic databases which content cover many disciplines or field of knowledge, e.g. Cambridge, Informaworld, JSTOR, Oxford, Sage, Springer, etc and Specific databases covering one discipline, e.g. law databases. Similarly, Agwunobi and Umoren (2020) stated that online databases are collection of different e-journals/e-books titles which when subscribed to the institution can be accessible to users in their electronic libraries. They found that, online databases available in faculty of law, university of Calabar, are: AGORA, EBSCOHOST, HINARY, LexisNexis, Hein Online and Science Direct.

Nigerian Universities subscribed to various types of electronic databases, Yusuf (2016) cited Aina (2014) in his survey reported that Babcock University library, Ogun state subscribed to AJOL, BOOKBOON, HINARI, EBSCOHOST, SAGE databases. Similarly, Okiki (2016) indicated that the University of Lagos subscribed to AGORA, EBSCOHOST, Oxford Journal Online, JSTOR, OARES, Law Pavilion, Legalpedia, MetaPress, Ebrary and Hinari databases. The databases that are utilized in faculties of law libraries are mostly the same as those found in the universal law libraries. In addition to these databases, most faculties of law libraries subscribe to one or more general law databases. According to Akpoghome and Idiegbeyan-Ose, (2010), a law database contains all the laws, cases, indexes, and materials that legal practitioners and law students can access at a very high speed without any stress.

Ossai (2011) identifies legal databases used by law students in University of Benin to include: Westlaw, Lexis-Nexis, Legalpedia, Compulaw, Law Pavilion, Hein Online and Ebscohost. The study of Akhilomen, Oluwatoyin and Osezua (2020) revealed that LexisNexisAcademic, Kluwer Arbitration, I-Law, Quick Law, World Legal Information, LexisNexis professionals, Lexis Analytics, & Biblio Online are the databases that are frequently utilized by Law Lecturers of Ambrose Alli University. Similarly, Oyinyechi (2016) observed that online databases are now available in Nigerian universities and there is an increase in the use online databases by students and lecturers in universities. He further found that the commonly used resources are Elsevier, I-Law, EBSCO host resources, AGORA, World Legal Information, Scopus, Questia, Proquest, Emerald, DATAD Science Direct and Springer Link, DOAJ, OARE, HINARI, TEEAL, Ebrary, AJOL and MIT Open Course Ware electronic databases.

Despite the overwhelming advantages associated with the use online databases, Konappa (2014) confirmed that online databases are underutilized in many tertiary institutions because of various reasons. The main challenges as identified by Omosekejimi, Eghoro and Ogo, (2015) were poor internet connection and inadequate or non-availability of the facilities to access the online databases. Ferdinand, Ruth and Paul (2015) identified lack of subscription and maintenance culture, poor awareness of the availability of the databases and lack of skills required to access and use the databases as the root causes of underutilization of databases in Federal University of Petroleum Resources, Effurun. Akpojotor (2016) is however, of the opinion that these challenges, unfortunately, may serve as distractive forces to deny information seekers the chance to effectively utilize online databases.

Methodology

The study adopted quantitative research methodology using survey research design. The population of the study comprises the head of law library and two hundred and ninety one registered undergraduate law students (those who have registered for 2018/2019) in Bayero University, Kano. The Isreal (1993) formula for determining the sample size was used to determine the appropriate sample size for each level of the undergraduate law students to arrive at the sample size of two hundred and ninety one (291) undergraduate law students. Table 1 shows the population of the study and the sample size of the study.

Table 1: Showing Population and Sample Size of the Study

S/N	Level	No. of Students	Individual Sample Size
1	I	160	43
2	II	249	66
3	III	244	66
4	IV	209	58
5	V	209	58
TOTAL		1,071	291

Source: The Isreal (1993) formula for determining the sample size

A self-developed questionnaire was randomly administered to two hundred and ninety one (291) undergraduate law students to collect data on the types of information literacy skills possessed by undergraduates of law, types of Online Databases utilized and challenges affecting utilization of Online databases in Bayero University, Kano. The instruments were validated by some lecturers in the department of library and information science and lecturers from faculty of law, Bayero University, Kano. The questionnaire was subjected to a validity test with cronbach's alpha value of 96% (i.e., $r = 0.96$). Two hundred and forty seven (247) copies representing (84.88%) were returned and found useful for analysis.

While self semi structured interview guide was developed for interview with the law librarian to find out the types of online databases available to undergraduate law students. The interview was conducted in the office of the law librarian, face to face and recorded by note taking which lasted for a period of one hour.

Quantitative data collected were analyzed using descriptive statistics with frequency and percentages, while narrative analysis was used to analyze the qualitative data from the interview.

Results Presentation and Interpretation

Two hundred and ninety one (291) copies of questionnaires were randomly administered to sampled undergraduates of law in Bayero University, Kano; two hundred and forty seven (247) copies representing 84.88% were successfully completed, collected, sorted and found relevant for data analysis.

Table 2: Information Literacy Skills Possessed by Undergraduates of Faculty of Law BUK.

S/N	Information Literacy Abilities	VH	H	L	VL
1	Ability to identify the need to use Online Databases	57 (23.08%)	174 (70.45%)	12 (4.86%)	4 (1.62%)
2	Ability to construct search strategy to locate general and legal databases	33 (13.36%)	165 (66.80%)	29 (11.74%)	20 (8.10%)
3	Ability to evaluate the online databases	57 (23.08%)	154 (62.35%)	26 (10.53%)	10 (4.05%)
4	Ability to use the databases to meet their information need	98 (39.68%)	148 (59.92%)	1 (0.40%)	0 (0%)
5	Ability to cite online legal information resources	57 (23.08%)	138 (55.87%)	27 (10.93%)	25 (10.12%)

Key: VH = Very High, H = High L = Low; VL=Very Low

Table 2 shows that, more than two-third of the undergraduate law students, possessed high level of information literacy skills in their ability to; identify the need to use online databases

(70.45%); to construct search strategy to locate general and legal databases (66.80%); to evaluate the online databases (62.35%); to use the databases to meet their information need (59.92%); and to cite online legal information resources (55.87%). This finding is in line with that of Akhilomeno, Oluwatoyin and Osezua (2020) where they found that, law lecturers' level of information literacy oscillated between 'very high extent' and 'high extent' with 100% of the responding lecturers being able to evaluate internet sources to a very high extent due to the availability of electronic databases in the university. The finding is also in line with Oyedapo and Akande (2020) who found that the information literacy skills of the undergraduates in federal universities in southwestern Nigeria is relatively high, since overall mean (3.25) is higher than criterion mean (2.50).

Types of Online Databases Available in Bayero University, Kano.

According to the Head of Law Library, Bayero University, Kano, the following are the types of Online Databases available to undergraduates of faculty of law. They include: JSTOR (general), Springer (General), E-Granary (Open Source), Law Companion (specific) Hein Online (specific), Lexis Nexus (specific) Oxford Press Online Journal (General), Ebscohost (General), Emerald and proquest. This finding collaborates with Agwunobi and Umoren (2020) who found that AGORA, EBSCOHOST, HINARY, LexisNexis, Hein Online and Science Direct are the online databases available in faculty of law, university of Calabar, Nigeria. Similarly, Okiki (2016) also found that the University of Lagos subscribed to AGORA, EBSCOHOST, Oxford Journal Online, JSTOR, OARES, Law Pavilion, Legalpedia, MetaPress, Ebrary and Hinari databases. This finding indicates that the library is equipped with general online databases covering various disciplines (law inclusive) and specific law databases (covering only law discipline). The implication of this finding is that the library must maintain regular subscription of these databases. Notwithstanding, the law students especially undergraduates must possessed some basic skills to be able to access and use both general and legal databases remotely to satisfy their information need especially in the midst of national challenges.

Table 3: Types of Online Databases Utilized by Undergraduates of Law, BUK.

S/N	Types of Online Databases	Utilization by Undergraduates		
		Utilized (U)	Not Utilized (NU)	Total (%)
1	JSTOR (general)	142 (57.49%)	105 (42.51%)	247 (100%)
2	Springer (General)	138 (55.87%)	109 (44.13%)	247 (100%)
3	Ebscohost (General)	121 (48.99%)	126 (51.01%)	247 (100%)
4	Law Companion (specific)	129 (52.23%)	118 (47.77%)	247 (100%)
5	Hein Online (specific)	128 (51.82%)	119 (48.18%)	247 (100%)
6	Lexis Nexus (specific)	132 (53.44%)	115 (46.56%)	247 (100%)
7	Oxford Press Online Journal (General)	151 (61.13%)	96 (38.87%)	247 (100%)
8	Emerald	133 (53.85%)	114 (46.15%)	247 (100%)
9	Proquest	161 (65.18%)	86 (34.82%)	247 (100%)

Table 3 shows that, undergraduates of faculty of law utilized both general and specific databases such as JSTOR (57.49%); Springer (55.87%); Ebscohost (48.99%); Law

Companion (52.23%); Hein Online (51.82%); LexisNexis (53.44%); Oxford Press Online Journal (61.13%); Emerald (53.85%); and Proquest (65.18%). This is in line with the study of Akhilomen, Oluwatoyin and Osezua (2020) whose finding revealed that LexisNexis Academic, Kluwer Arbitration, I-Law, Quick Law, World Legal Information, LexisNexis professionals, Lexis Analytics, & Biblio Online are the databases that are frequently utilized by Law Lecturers of Ambrose Alli University.

However, considering the ratio or proportion of students that agreed that they utilized online databases with those that revealed they did not utilize; it can be observed that there is low utilization of online databases among undergraduate law students in BUK. In other words, the rate at which undergraduate law students utilize both general online databases such as JSTOR, Springer and Specific online databases such as Law Companion is low. This calls for immediate action from the library management.

Table 4: Challenges Associated with Utilization of Online Databases by undergraduates of law, BUK

S/N	Challenges	Yes (%)	No (%)	Total (%)
1	Lack of subscription to online databases	223 (82.29%)	48 (17.71%)	247 (100%)
2	Lack of assistance from the library staff	181 (66.79%)	90 (33.21%)	247 (100%)
3	Lack of ICT skills to access use Online databases	84 (31%)	187 (69%)	247 (100%)
4	Interrupted power supply	141 (52.03%)	130 (47.97%)	247 (100%)
5	Inadequate ICT facilities to access and use online databases	255 (94.1%)	16 (5.9%)	247 (100%)
6	Poor Internet signal service to access and use online databases	211 (77.86%)	60 (22.14%)	247 (100%)

Table 4 shows that the various challenges associated with utilization of online databases by the respondents. Lack of subscription to online databases (82.29%); lack of assistance from the library staff (66.79%); interrupted power supply (52.03%); inadequate ICT facilities to access and use online databases (94.1%); and poor Internet signal service to access and use online databases (77.86%) are the major challenges, thus causing underutilization of online databases in the library under study. This finding is in line with Ferdinand, Ruth and Paul (2015) where they identified lack of subscription and maintenance culture, poor awareness of the availability of the databases and lack of skills required to access and use the databases as the root causes of underutilization of databases in Federal University of Petroleum Resources, Effurun. The finding is in contrast to the work of Aghauche, Nkamnebe and Nkamnebe (2019) who found that there was institutional negligence of information literacy instruction programs of undergraduates in Paul University Awka, Anambra State, Nigeria which largely contributed to the challenges the undergraduates faced in utilization of information sources.

Conclusion

The study concludes that effective utilization of online data bases by undergraduate law students is dependent on certain literacy skills. Such skills include the need to use online databases, to construct search strategy, to locate general and specific databases, to evaluate the online databases, to use the databases to meet their information need and to cite correctly online information resources. This therefore, makes it mandatory for undergraduates of faculty of law to acquire and update their information literacy skills in order to cope with the workload of their academic activities.

Recommendation

- 1) The need for the faculty of law, Bayero University Kano to integrate information literacy courses to become part of its curriculum for undergraduates. The law librarians and the faculty staff should co-design the content of information literacy courses. This will ensure that undergraduates have easy access and use of the electronic databases.
- 2) The need for the law librarian to be proactive by creating awareness program of their resources and services in order to enlighten the university community (undergraduate law students inclusive) on the availability of online databases in their libraries.
- 3) The need for regular subscription of online databases by the library management to allow undergraduates to fully benefit from the available databases of their library.
- 4) Bayero University library should try as much as possible to ensure internet connectivity and provide a more reliable source of power to the library and other alternative sources of power in the form of generators and inverters for the students to allow effective utilization of online databases.

REFERENCES

- Aghauche, E. E., Nkamnebe, C. B. & Nkamnebe, E. C. (2019). Information literacy skills of undergraduates in Paul University Awka, Anambra State. *UNIZIK Journal of Research in library and Information Science*, 4(1), 94-109. Retrieved from <https://journals.unizik.edu.ng/index.php/ujolis/article/view/61>
- Agwunobi, J. N. & Umoren (2020). The use of online legal information access and retrieval devices in the e-library, Faculty of Law University of Calabar, Nigeria. *Journal of Library Services and Technology*, 2(1), 30-40. Retrieved from credencepressltd.com.
- Akhilomen, D. L., Oluwatoyin, O. O. & Osezua, B. E. (2020). In Information literacy skills, information ethics observance and se of electronic databases by law lecturers of Ambrose Alli university. *Library and Information Science Digest*, 13(4), 25-38.
- Akpojotor, L. O. (2016). Awareness and usage of electronic information resources among postgraduate students of library and information science in Southern Nigeria. *Library Philosophy and Practice*, 40(3), 45-56.
- Akpovire, E., Olawoyin, O. R., Adebayo, O. & Esse, U. C. (2019). Role of information literacy skills on use of information resources by medical students in Lagos state. *Library Philosophy and Practice*, 4(1), 1-19. Retrieved from <http://digitalcommons.un.edu/libphilprac/2148>.
- Alhassan, J. A. and Afolabi, M. (2012). The use of information and communication research in agricultural research in Nigerian Universities. *Nigerian Library Association Quarterly*, 29(6), 21-32
- Association of College and Research Libraries (ACRL). (2016). Framework for information literacy for higher education. Retrieved from <https://www.ala.org/acrl/standards/i/framework>
- Ani, O. E. & Ottong, E. (2010). Information technology literacy and information utilization in Nigerian universities: A Study of undergraduate students in university of Calabar, Calabar, Nigeria. *The Information Technologist*, 7(2), 36-44.
- Banik, P. & Kumar, B. (2019). Impact of Information Literacy Skill on Students' Academic Performance in Bangladesh. *International Journal of European Studies*, 3(1), 27-33. Retrieved from <http://www.sciencepublishinggroup.com>
- Bashorun, M. T., Isa, A. & Adisa, M. Y. (2011). User perception of electronic resources in the university of Ilorin. *Journal of Emerging Trends in Computing and Information Sciences*, 2(11), 24-31.
- Bell, S. J. (2009), Building better academic libraries with web 2.0 technology tools, *Library Issues*, 28 (2)

- Ferdinand, O. A., Ruth, E. O., & Paul, O. E. (2015). Usage of electronic information resources (EIRs) by Undergraduate Students of Federal University of Petroleum Resources Effurun. *Information and Knowledge Management*, 5 (4), 94-103.
- Hepworth, M. (2015). Approaches to providing information literacy training in higher education: Challenges for librarians. *The New Review of Academic Librarianship*, 2(1), 21-34.
- Julien, H. & Boon, S. (2012). From the front line: Information literacy instruction in Canadian academic libraries. *Reference Services Review*, 30(2), 143-149.
- Konappa, K. (2014). Use of electronic information resources in university libraries of Tirupati : An analytical study. *International Journal of Library and Information Science*, 6 (1) 5-13.
- Lwoga, E.T. (2014). Mapping information literacy outcomes and learning experiences of health sciences undergraduate students. *Partnership: The Canadian Journal of Library and Information Practice and Research*, 9(1), 28- 34. Retrieved From <http://www.lwoga%202014&hl=en-us>
- Nisha, F. & Ali N. P. M. (2013). Awareness and use of e-journal by IIT Delhi and Delhi University library users. *Collection Building*, 32(2), 57-64.
- Okiki, O. C. (2016). Availability of information resources for research output: Perception of academic staff members in Nigerian federal universities. *International Journal of Computer Science and Telecommunications*, 4(8), 36-48.
- Olorunfemi, D. Y. (2014). The Information Behavior of Law Students in Nigerian Universities. (Unpublished Ph D Thesis). University of Zululand, South Africa.
- Omosekejimi, A. F., Eghworo, O. R. & Ogo, E. P. (2015). Usage of electronic information resources by undergraduate students of federal university of petroleum resources Effurun. *Information and Knowledge Management*, 5(4), 94-103.
- Ossai, N. B. (2011). How Law Students Utilize Information Resources: A Case Study of the University of Benin, Benin City. *International Journal of Library and Information Science*, 3(1), 1-14. Retrieved from <http://www.academicjournals.org/ijlis>.
- Osunrinade, O. A. (2018). Demographic factors, information literacy skills and mediareources utilization among secondary school students in Ogun State,Nigeria. *Journal of information and knowledge management*, 9(3), 1-17. Retrieved from <https://pdfs.semanticscholar.org>
- Oyedapo, R. O. & Akande, S. O. (2020). Patterns of Information Literacy Skill Proficiencies of Undergraduates in Federal Universities in Southwestern Nigeria. *Jewel Journal of Librarianship*, 15(2), 68-78. Retrieved from <https://www.jeweljournals.com>
- Oyinyechi, O. V. (2016). Provision and utilization of electronic information resources by undergraduate students in federal universities in South-south zone of Nigeria. *Nigeria Library Review*, 52(5), 228-233.

- Sahabi, M. K. & Omagbon, A. B. (2020). Information Literacy Skills and Electronic Information Resources Use by Undergraduates in University Libraries in Nigeria: A Review of Literature From 2015 To 2019. *Global Journal of Applied, Management and Social Sciences*,1(2), 311 – 322.
- Yusuf, M. (2016). Access and use of electronic databases by the academic staff of Bayero university, Kano. (Unpublished masters theses) Department of Library and Information Sciences, Bayero University, Kano.

EFFECT OF INFORMATION AND COMMUNICATION TECHNOLOGY (ICT) AMONG DAWAKIN KUDU ZONE SECONDARY SCHOOL STUDENT ACADEMIC ACHIEVEMENT ON HUMAN CIRCULATORY SYSTEM

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Abstract

Human circulatory system is a modern biology organism at work. Human circulatory system is abstract and wider in content. However, the effect of Information and Communication Technology (ICT) has been found to be effective in enhancing students' academic achievement in biology. Its application in solving daily life problems of health and environmental related issues in the society can never be overemphasized. This study is aimed at determining the effect of (ICT) among Dawakin Kudu zone secondary school students academic achievement on human circulatory system. The study was a quasi experimental design. Two schools comprising of forty students each were selected at random and used as experimental and control groups. Three research questions and three hypotheses were formulated to guide the study. Biology achievement test of 20 items (Human Circulatory system) was used to collect the data. Content and face validity was used to validate the data by two professors of biology and science education. Reliability coefficient using test-retest method was 0.75. Result of the findings showed a significant effect in student's academic achievement when ICT was used in teaching them compared to the conventional method used in teaching circulatory system in humans In conclusion, information and Technology enhances student's academic achievement on human circulatory system in Dawakin Kudu education zone. It is recommended that, teachers should redouble their effort to improve efficiency in teaching and learning biology with the aid of ICT.

Key Words: Academic Achievement, Secondary school Biology, Human Circulatory system, Information Communication Technology

Introduction

Biology is a science subject offered at the secondary school level. Oguniwin, Asaju and Adegoke (2018) defined biology as a natural science, that study life, the evolution of organisms, their structure, function, processes and interaction. Circulatory system in man according to the Nigerian Educational Research and Development (NERDC, 2009) is modern biology concept organisms at work.

Literally, circulatory system as described by Ozgur (2013) is a physiological process that rapidly moves blood and substances to and fro in the living cell. Circulatory system is also known as cardiovascular system .It consists of series of connected tubes that link major organs together. Circulatory system consists of the heart and blood vessels which functions together as a system. The heart pumps blood around these tubes in a double circulation. Sadi and Cakiroglu (2014) asserted that, circulatory system in humans has been found to be one

important concept in biology curriculum. They further attributed the fundamental importance of circulatory system in human. It controls the to and fro movement of nutrients, gases, electrolyte, prevention of diseases as well as maintaining a stable internal environment in the body (*Homeostatic*).

Academic achievement according to Steinmayr, Weidinger, and Wirthwein (2020) can be described as a representation of performance out comes that indicates the extent to which a person has accomplished short or long term goals. The achievement is focused on activities in instructional learning environment. It occurs specifically in school which is measured through examination or continuous assessment. Kpolovie, Joe, Osonwa and Iderima (2014) supported this view and maintained that, it is an observed and measured aspect of a student's mastery of skills and subject contents as measured with valid and reliable tests. However, studies have shown that, circulatory system in humans are perceived to be as difficult, complex, abstract and wider in concept (Songur and Tekayya, 2003; Ozgur 2013; Etobro and Fabinu (2017) as this might inhibit students academic achievement.

Information and communication technology according to Burnil (2014), Cigdemoglu and Akay (2016) is the study of design, development, implementation, support or management of computer based information systems particularly, software application and computer hardware They further maintained that, it is a means and act of imparting new knowledge or transmitting information. Communication is the method by which people share their ideas, information, opinions and feelings. Educationally the role of ICT in teaching and learning according to Matthew, Joro, Manasseh (2015), Sarmah, Das, and Kashyap (2020) has increased individualization of learning, motivation , interest , attitude critical thinking ,conceptual understanding, active learning and engagement. They further ascribed ICT usage in the transformation of work and enabling group interactions based on central reserves of shared knowledge. It also enables students' access to tools that adjust to their attention span.

Historically, Starr and Macmillan (2015) opined that, circulatory system was first described by Waller and Jimmie in the late 1880 in their experiment of the bucket of salty water. They used it to describe the recording of heart activity. They further describe the structure of the heart (a double pump) as a cardiac muscle tissue, the *Myocardium*. It is a tough, fibrous sac, the pericardium (*peri*=around), surrounds, protects and lubricates the heart. It consists of two halves each divided into an atrium and a ventricle. The valves in each half of the heart helps to control the direction of blood flow. They functions together for effective wellbeing of man. They facilitate the pumping of blood from the heart to various parts of the body and from the body back to the heart.

In addition, Palaezi, Boyd, Rajas and Hoove , (2005) ,Idodu (2018); referred to the mechanism of the human circulatory system as double circulatory system. It is of two separate processes in form of circuits of blood flow- Pulmonary and systemic circuits. Each half of the heart pumps blood. The two side by side pumps are the basis of two cardiovascular circuits through the body. Each has its own set of arteries, arterioles, capillaries, venules, and veins. Blood passes through the heart twice. They further maintained that, pulmonary circuit receives blood from tissue and circulates it through the lungs for gaseous exchange. Blood from the tissue enters the right atrium, and then moves through the AV valve in to right ventricle. (When the ventricle is filled, the atrium contracts) .Blood arriving in the right ventricle is fairly low in oxygen and high in carbon dioxide. When the ventricle contracts, the blood moves through the right semilunar valve in to the main pulmonary artery, then into the and left pulmonary arteries carries the blood into the two lungs. The blood capillaries pick up

oxygen and gives up carbon dioxide that will be exhaled. Freshly oxygenated blood returns through two sets of pulmonary veins, back to the hearts left atrium to complete the circuit

On the other hand the systemic circuit process involve the to and fro movement of blood from the tissue. Oxygenated blood pumped by the left half of the heart moves through the body and returns to the right atrium. The left atrium receives blood from the pulmonary vein which moves through an AV (bicuspid) valve to the left ventricle. The chamber forcefully contracts. Blood is send through a semilunar valve into the aorta. As the aorta descends into the trunk, major arteries branch it off and funnel blood to organs and tissues. O₂ is used and CO₂ is produced. For example, in a resting person, a quarter of blood pumped into the systemic circulation enters the kidney through the renal arteries. Deoxygenated blood returns to the right half of the heart where it enters the pulmonary circuit. However, in both pulmonary and the systemic circuit, blood travels through the arteries arterioles, capillaries,, and venules and finally returns to the heart in veins. Blood from the head, arms, and chest arrives through the superior *vena cava* and the inferior vena cava collects blood from the lower body.

In order to meet up with the expectations in the mist of national challenges in modern biology at the secondary school level, the effect of information Communication Technology (ICT) in enhancing students' academic achievement on human circulatory system for effective teaching and productive learning outcome cannot be over emphasized. The complexity, difficulty, abstract and wider content of human circulatory system hindering students' achievement would be minimized to a bearing level. However, this to some extent would enhance efficient health related issues as well as socio economic development of the nation at large,

The major problem in our school system in teaching biology is the so much use of traditional teaching method which ignores the use of modern innovations in teaching science. Circulatory system in man is a concept in modern biology of physiological life process that is very vital in daily life health, environmental and economic problems. Ineffective use of teaching material have inhibit productive learning outcome in biology. The abstract nature and wider content of circulatory system in human hinders students' academic achievement. However, the problem of this study posed as a question is: Do information and communication technology (ICT) have any effect among Dawakin kudu zone secondary school students' academic achievement in human circulatory system?

The Purpose of the Study

The purpose of this study is to determine the effect of information and communication technology (ICT) among Dawakin kudu zone secondary school students academic achievement in human circulatory system. Specifically the study is to:

1. Determine the Pre. test mean score of students in the experimental and control group
2. Determine the difference between pre-test and post-test mean achievement of students taught using (ICT).
3. Determine the mean difference between post –test achievement of students in the experimental and control groups

Research Questions

1. What is the pre-test mean score of the students in the experimental and control groups?
2. What is the difference between pre-test and post-test mean scores of students taught with the aid of ICT?

3. What is the mean difference between the post-test score of students in the experimental and control groups?

Research Hypotheses

H₀₁: There is no significant difference between the pre-test score of students in the experimental and control groups.

H₀₂: There is no significant difference between the pre-test and post test mean scores of students in the experimental groups.

H₀₃: There is no significant difference between the post –test mean score of students in the experimental and control groups.

Methodology

The research design was a quasi experimental design. A pretest, Post test was used. The population consists of SSII students within 16years average age offering Biology in Dawakin Kudu educational zone. Two schools comprising of forty students each were selected at random using odd and even numbers .The odd numbers was used as experimental while the even numbers were assigned to control groups. Biology achievement test of 20 items (Human Circulatory system) was used to collect the data. Content and face validity were used to validate the data by two professors of Biology and Education. The instrument was pilot tested by retest method with a reliability coefficient of 0.75. The data was analyzed using descriptive and inferential statistic. SPSS Version 20 was used to analyze the data. Means and Standard Deviation was used to answer the research questions while and Z-scores was used to test the hypotheses at 0.05% level of significance.

Results

Research Question 1: What is the pre-test mean score of the students in the experimental and control group?

Table 1: Mean Score of Pre-test and Control and Experimental groups

Groups	\bar{X}	SD	N
Experimental Group	56.75	6.065	40
Control Group	55.25	7.066	40

Result in table 1 above revealed that, students in both the experimental and control group prior to the treatment of the experimental group possess equal intellectual ability with a mean of 56.75 and 55.25.

Research question 2: What is the difference pre-test and post-test mean score of students taught with the aid of ICT?

Table 2: Mean Score Difference between Pre-test and Post Test of Experimental Group

Experimental	\bar{X}	SD	N
Pre-test	56.75	6.065	40
Post Test	70.25	8.766	40
Difference	13.50		

Result as in table 2 above shows that, there is a difference of 13.50 between the pretest mean of 56.75 and post test mean of 70.25 of the experimental group therefore, the effect of information and communication technology (treatment) is positive and relatively high

Research Question 3 What is the mean difference between the post-test score of students in the experimental and control group?

Table 3: Mean gain score difference of academic achievement of control group between post -test of students in the experimental and Control group

Variables	\bar{X}	SD	N
Experimental	70.25	8.76	40
Control	54.50	4.77	40
Mean Difference	15.75		

Result as in table 3 above shows that, the experimental group had a mean gain score of 70. 25 while the control group had a mean gain of 54. 50 in the treatment group; this indicates that, the use of Information and communication Technology has a high and positive effect when compared with the traditional method of teaching human circulatory system

Ho₁: There is no significance difference between the pre-test score of students in the experimental and control group.

Table 4: Result of Difference of Pretest between Control and Experimental Group Z-Score

Variable	N	\bar{X}	SD	S.E	Z-Cal	Z Critical	Remark
Experimental Group	40	56.75	6.05				
Control Group	40	55.25	7.07	1.117	4.38	0.719	Significance

Result as in table 4 above shows that the calculated Z-score was 4.38 while Z- critical was 0.719 , Z- cal > Z- therefore the null hypothesis states that there is no significance difference between the mean pretest academic achievement of the students taught using Information and communication technology and those taught using the traditional method is rejected.

Ho₂: There is no significance difference between the pre-test and post test mean score of students in the experimental group.

Table 5: Result of Difference between experimental Group in Pre-test and Post –test Z-Scores

Variable	N	\bar{X}	SD	S.E	Z-Cal	Z- Critical	Remark
Pre-test	40	56.75	6.05				
Post –test	40	70.25	8.76	1.386	5.43	0.16	Significance

Result as in table 5 above shows that the calculated Z-score was 5.43 while Z- critical was 0.16 Z- cal > Z- therefore the null hypothesis states that there is no significance difference between the mean academic achievement of students human circulatory system using (ICT) of pre-test and post-test is rejected

Ho₃: There is no significance difference between the post –test mean score of students in the experimental and control group.

Table 6: Result of Difference in Post- Test mean score of Experimental and Control group Z-Score

Variable	N	\bar{X}	SD	S.E	Z-Cal	Z-Critical	Remark
Experimental	40	70.25	8.766				
Control	40	54.50	4.77	0.75	2.99	0.75	Significance

Result as in (table 6) above indicated that, the calculated Z- score was 2.99 while Z critical was 0.75 the Z- cal > Z- Therefore the null hypothesis which state that, there is no significance difference between the academic achievement of students taught human circulatory system using information and communication technology using traditional method is rejected.

Discussion

Circulatory system in man is a concept in modern biology of physiological life process that is very vital in daily life health, environmental and economical problems. Despite the fact that, students' at secondary school level possess their own intellectual potentials, however effective and appropriate use of information and communication technology facilities by teachers can enhance students' achievement. This can lead to positive academic gain as revealed by the findings On the other hand , the much emphasis in teaching circulatory system in man leads to ineffective and inappropriate use of instructional material. This in turn inhibit productive learning outcome in Biology. However, students ability, mastery of skills on human circulatory system contents measured with valid and reliable tests depict their achievement. The finding of this study was in line with the study of Sadi, and Cakiroglu, (2014) , Cigdemoglu and Akay (2016) in Turkey Sarmah et al . (2020) who recorded high achievement score in utilizing ICT in teaching and learning mathematics in India.

Similarly, the use of Information technology has an effect in teaching and learning Human circulatory system. Students' achievements have been positive and high. This is to say that, with effective use of (ICT) in teaching human circulatory system, the perception that the concept is complex, abstract in nature and wider in content will eventually be eliminated. Thus students' achievement in human circulatory system would be enhanced. The complexity and abstract nature would be made concrete and permanent. This in turn will improve student academic achievement and its application to daily life issues of health, environmental and economical problems in the society. This study was in line with the studies of Songur and Tekayya (2003) who recorded mean difference between concrete and formal students on achievement in human circulatory system. Also, Palaezi et al. (2005) also in India recorded 70% mean difference of achievement on double circulation among prospective biology teachers. Also Etobro and Fabinu (2017) in Lagos Nigeria recorded 80% abstractness and 76.2% complexity respectively in human circulatory system..

Conclusion

Based on the findings of this research it can be concluded that, the use of information communication technology can improve students' academic achievement as compared to the traditional method of teaching biology among secondary school students in Dawakin Kudu education zone.

Recommendations

The following recommendations were made:

1. Biology teachers in Dawakin Kudu education zone should redouble their efforts to improve productive teaching and learning biology concepts with the aid of Information and communication Technology (ICT)
2. Biology teachers at secondary school level should be trained through seminars, workshops symposium and conferences on the use of Information and communication Technology in facilitating teaching and learning biology
3. Education stake holders should provide functional ICT tools for effective socio economic development of the nation.

REFERENCES

- Burrill, G. (2014). Developing Conceptual Understanding: The Role of Interactive Dynamic Technology: In K. Makar, B. de Sousa, & R. Gould (Eds.), *Sustainability in Statistics Education: Proceedings of the Ninth International Conference of Teaching Statistics Flagstaff, Arizona, USA*. Voorburg: The Netherlands International Statistical Institute. iaseweb.org [© 2014 ISI/IASE]
- Cigdemoglu, C., & Akay, H. (2016). Use of ICT Tools and their Effect on Teaching and Learning Students' And Instructor's Views Atilim University (TURKEY) 8th International Conference on Education and New Learning Technologies Barcelona, Spain
- Etobro, B.A., & Fabinu, E.O. (2017). Students Perception of Difficult Concepts in Biology in Senior Secondary schools in Lagos State: *Global Journal of Education Research*, **16** (2), 139-147, Retrieved on 18th July, 2021 from <https://dx.doi.org/w.4314ajedi.v1612.8>.
- Idodu, U.G. (2018). *College Biology for Senior Secondary Schools* 6th Edition Udo Umen Publishers Benin, Nigeria; Pp. 668
- Kpolovie, P. J. Joe, A.I., & Okoto, T. (2014). Academic Achievement Prediction: Role of Interest in Learning and Attitude towards School. *International Journal of Humanities Social Sciences and Education (IJHSSE)*, **1**(11), 73-100: Retrieved on 18th July, 2021 from www.arcjournals.org
- Matthew, D. Joro, I.D., & Manasseh, H. (2015). The Role of Information Communication Technology in Nigeria Educational System: *International Journal of Research in Humanities and Social Studies*, **2** (2), 64-68
- Nigerian Educational Research and Development (NERDC, 2009): Senior Secondary Education Curriculum Biology for Senior Secondary Schools, 1-3 .Federal Ministry of Education, Kaduna Road Sheda Abuja, Nigeria; Pp. 66
- Ogundiwin, O. A. Asaju, O. A. Adegoke, A.I., & Ojo, A.T. (2018). Effect of Group Investigative Laboratory Strategies in Students Achievement in Biology: *Pyrex Journal of Research in Environmental Studies* **2** (4), 35-41
- Ozgur, S. (2013). The Persistence Misconceptions about the human Circulatory System among Students on Different grade level. *International Journal of Science Education*, **8**(2), 255-268: <https://doi.org/10.12973/ijese2013.206a>
- Palaezi, N.J., Boyd, D. D. Rajas, J.B., & Hoove, M.A. (2005). Prevalence of Blood Circulation Misconceptions among Prospective Elementary Teachers: *Advances in Physiology Education: American Physiological Society*. Retrieved on 22nd July, 2021 from <https://doi.org/10.1152/advan.000222004>.

- Sadi, O.C., & Cakiroglu, J. (2014). Relations of Cognitive and Motivational variables with Students Achievement in Traditional and Learning Classroom:. *Journal of Educational Sciences Theory and Practice*; **14** (2), 1997-2014: Educational Consultancy and Research Centre
www.edu.com.tr/estpDoi:10:12738/estp.2014.5.2037
- Sarmah, D. Das, G.C., & Kashyap, M.P. (2020). Role of ICT in Teaching and Learning Mathematics – An Overview: *Journal of Critical Reviews*. **2**(11),.4501-4506
- Starr, C., & Macmillan, B. (2015). *Human Biology* (11th Edition). Cengage Publishers; Pp.608
- Steinmayr , R. Meibner, A. Weidinger, A.F., & Wirthwein, L. (2020) *Academic Achievement* Oxford Bibliographies: Doi10. 1093/OBO /9780199756810-0108
- Sungur, S., & Tekkaya , C (2003). Students Achievement in Human Circulatory System Unit: Effect of Reasoning ability and Gender: *Journal of Science Education and Technology*'.**12** (1), 59-84.

AVAILABILITY AND USE OF INSTRUCTIONAL MATERIALS IN TEACHING AND LEARNING OF ECONOMICS IN FAGGE LGA, KANO STATE

By

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Abstract

The study identifies availability and use of instructional materials in teaching and learning of Economics in senior secondary school in Fagge LGA, Kano State Nigeria. The purpose of the study was to determine the availability, functionality and the usage of instructional materials for teaching and learning of the subject. The researcher used Survey Research Design. The finding from descriptive survey design was used to generalize the researcher's results about the target population. The questionnaire was used to gather data for analysis, the instrument used in this study was vetted by experts in the field of measurement and evaluation. This was to determine the face and content validity of the instruments. The instrument was tested on different population and analysed using Pearson Product Moment Correlation Coefficient (r) was adopted to determine the reliability coefficient of the instrument which gave 0.87. Statistical frequency, percentage and mean score were used to analyse the data gathered. The result shows that instructional materials are available for the teaching and learning of Economics in Secondary Schools but they are not enough. This implies inadequate instructional materials for teaching and learning. The study also further discovered that instructional materials are very important to influence students' retention, acquisition of knowledge, competency, simplify and clarification of complex issue in Economics. It also was observed that overcrowded class, cost of production and purchase of instructional materials were the major factors affecting effective use of instructional materials in the study area. Recommendations were made based on the findings.

Keyword: *Use of Instructional Material; Teaching and Learning, Availability and Economics*

Introduction

Teaching conceptually is based on knowledge and skills in imparting subject with professional competence in the use of methods and materials to be able to influence the behavior of learners by using instructional materials. The sole aim of any teacher is to ensure effective teaching and learning on the part of his pupils. Therefore, no teaching is possible at any significant age level without the use of instructional materials. And no teacher who hopes

to promote learning can ignore the use of instructional materials in teaching and learning. The use of instructional materials obviously helps the students in remembering and retaining what they have learnt (Kadzera, 2006). These instructional materials bring life to learning by stimulating students to learn. Use of instructional materials in the classroom has potential to help the teacher explain new concepts clearly, resulting in better student understanding of the concepts being taught. They are not ends in themselves but they are means to an end (Kadzera, 2006). It is held that good teaching resources can never replaced the teacher but the teacher uses them to achieve their teaching and learning objectives. Some of the instructional are necessary for effective teaching and learning of Economics include the chalkboard, models, graphs, charts, maps, pictures, diagrams, cartoons, slides, filmstrips, radio, and television (Kochhar, 2012).

Instructional materials are essential and significant tools needed for teaching and learning of school subjects to promote teachers' efficiency and improve students' performance (Kochhar, 2012). They make learning more interesting, practical, realistic and appealing. They also enable both the teachers and students to participate actively and effectively in lesson sessions. They give room for acquisition of skills and knowledge and development of self- confidence and self- actualization. The role of instructional materials in teaching and learning is one of the most important and widely discussed issues in contemporary education policy. Therefore, instructional materials are paramount important issues in classroom interaction and successful transfer of knowledge from the teacher to the learners. Ibeneme (2000) defined teaching aids as those materials used for practical and demonstration in the class situation by students and teachers. Ikerionwu (2000) saw instructional materials as objects or devices that assist the teacher to present a lesson to the learners in a logical and manner.

In his own perspective, Fadeiye (2005) saw instructional materials as visual and audio-visual aids, concrete or non-concrete, used by teachers to improve the quality of teaching and learning activities in Social Studies. Agina-Obu (2005) submitted that instructional materials of all kinds appeal to the sense organs during teaching and learning. Isola (2010) also described instructional materials as objects or devices that assist the teachers to present their lessons logically and sequentially to the learners. Oluwagbohunmi and Abdu-Raheem (2014) acknowledged that instructional materials are such used by teachers to aid explanations and make learning of subject matter understandable to students during teaching learning process.

In addition, Ajayi and Ayodele (2001) stressed the importance of availability of instructional materials to achieving effectiveness in educational delivery and supervision in the school system. Ogbondah (2008) alerted on the gross inadequacy and underutilization of instructional materials necessary to compensate for the inadequacies of sense organs and to reinforce the capacity of dominant organs. He noted that school teachers should try their possible best in the provision of locally made materials in substitution for the standard ones to promote their lessons. Enaigbe (2009) noted that basic materials such as textbooks, chalkboard and essential equipment like computer, projector, television and video are not readily available in many schools.

Olumorin, Yusuf, Ajidagba and Jekayinfa (2010) observed that instructional materials help teachers to teach conveniently and the learners to learn easily without any problem. They asserted that instructional materials have direct contact with all sense organs. Kochhar (2012) supported that instructional materials are very significant learning and teaching tools. He suggested the needs for teachers to find necessary materials for instruction to supplement what textbooks provide in order to broaden concepts and arouse students' interests in the

subject. According to Abolade (2009), the advantages of instructional materials are that they are cheaper to produce, useful in teaching large number of students at a time, encourage learners to pay attentive attention and enhance their interest.

According to Joshua in Abiodun-Oyebanji and Adu(2007), instructional materials are all things that are used to support, facilitate, influence or encourage acquisition of knowledge, competency and skills. Abdu-Raheem (2014) encouraged teachers to improvise teaching aids because they are in great measure enhance learners' full participation in the lesson, gives room for inquiry, problem-solving, discussion and clarification of issues and ideas among students and the teacher. Riveire (2006) noted that improvisation is a valuable teaching tool. Afolabi and Adeleke (2010) identified non-availability, inadequacy and non utilization of learning materials as a result of teacher's poor knowledge as factors responsible for the use of lecture method.

Statement of the Problem

In spite of the importance of instructional materials to academic performance of students, it is observed that most students complain of being taught principles that seem to be abstract in nature. It is on the strength of the above, that the researcher deems it necessary to research so as to highlight the function of instructional materials in teaching and learning process and also study the problems that are associated with effective application of instructional materials in teaching and learning of Economics in senior secondary schools in Fegge LGA of Kano State

Objective of the Study

The major purpose of this study is to determine the availability and use of instructional materials in teaching and learning of Economics at senior secondary schools in Fegge LGA, Kano State, Nigeria. The specific objectives are to: examine the availability and use of instructional materials in teaching and learning of secondary school Economics in the study area

1. Identify the availability of instructional materials for teaching and learning of secondary school Economics in the study area
2. Identify the importance instructional materials for teaching and learning of secondary Economics in the study area
3. Identify the factors affecting the use of instructional materials in teaching and learning of secondary school Economics in the study area

Research Questions

The following research questions were answered in the course of the study.

1. What are the available instructional materials for the teaching and learning of Economics?
2. What are the importance of instructional materials for teaching and learning of Economics?
3. What are the factors affecting the use of instructional materials for teaching and learning of secondary school Economics in the study area?

Methodology of the Study

The researcher used Survey Research Design in this study. Primary data was collected on certain characters among the randomly selected sampling from the target population who are located at various points in the study areas. The population of the schools in the study area were 621 secondary schools and the population of the economic teachers were 362. The

finding from descriptive survey design was used to generalize the researcher's results about the target population. The subjects or respondents were given questionnaire as the instruments to collect the data.

A sample of thirty (30) Government and private secondary schools were randomly selected from the population. From the sampled schools sixty (60) teachers of Economics were selected to represent the samples. The researcher used questionnaire as the instrument for the data collection which were made up of questions arranged systematically based on the research questions to collect data and information from teachers of Economics in the thirty (30) selected Government and private Secondary Schools in the area of study. The questionnaire for the teachers was divided into two (2) sections: Section 'A' was on bio-data and section 'B' was on questions related to the research questions. The instrument used in this study was vetted by experts in the field of measurement and evaluation. This was to determine the face and content validity of the instruments. The instrument was tested on different population and analysed using Pearson Product Moment Correlation Coefficient (r) was adopted to determine the reliability coefficient of the instrument which gave 0.87.

The researchers personally administered the instruments (questionnaire) to the subjects or respondents. The research questions answered were analysed using the frequencies, percentages and means. Criteria mean set for accepting an issue or item is 3.00.

Results

Research Question 1: what are the available instructional materials for the teaching and learning of Economics?

Table 1: Availability of instructional materials in teaching and learning of Economics in study area

S/N	INSTRUCTIONAL MATERIALS	AVAILABLE		NOT AVAILABLE	
		Frequency	Percentage	Frequency	percentage
1	Textbooks	57	95%	3	5%
2	Journals	1	1.7%	59	98.3%
3	Magazines	4	6.7%	56	93.3%
4	Maps	10	16.7%	50	83.3%
5	Charts	49	81.7%	11	18.3%
6	Diagrams	48	80%	12	20%
7	Posters	30	50%	30	50%
8	Slide	0	0%	60	100%
9	Projectors	0	0%	60	100%
10	Computer	2	3.3%	58	96.7%
11	Radio	0	0%	60	100%
12	Television	0	0%	60	100%
13	Internet service	0	0%	60	100%
14	Globes	6	10%	54	90%

Table 1 above shows percentage and frequency of the available and not available instructional materials in the study area, the result shows that textbook 57(95%), diagrams 48(80%), charts 48(81%) and posters 30(50%) are readily available in Economics classes in Fegge LGA Kano State for teaching – learning Economics. However, the results indicate that instructional materials such as internet service 0(100%), television 0(100%), projector 0(100%), slide 0(100%), journal 1(1.7%), computer 2(3.3%), magazines 4(6.7%), globes

6(10%) and maps 10(16.7%) are either not available or short in supply in secondary school in Fegge LGA of Kano State.

Research Question 2: What are the importance of instructional materials for teaching and learning of Economics in the study area?

Table 3: The importance of instructional materials in the study area

SN	What is the importance of instructional materials for teaching and learning of Economics in the study area?	MEAN	DECISION
1	Instructional materials influence learning and improve the competence of Economics teachers	3.55	Accepted
2	Instructional materials save time and also promotes retention	3.91	Accepted
3	Instructional materials can simplify and clarify what is complex and difficult to express in words	5.00	Accepted
4	Instructional materials arouse interest by attracting attention of Economics students	3.00	Accepted
5	Motivational value has influence on the use of instructional materials	1.4	Rejected
6	Instructional materials support, facilitate, influence or encourage acquisition of knowledge, competency and skills among students	3.3	Accepted

Table 3 above shows the importance of using instructional materials in teaching – learning of Economics at senior secondary schools in the study area, the result showed that instructional materials are very important to influence students’ retention, acquisition of knowledge, competency, simplify and clarification of complex issue in Economics.

Research Question 3: What are the factors affecting the use instructional materials for teaching and learning of secondary school Economics in the study area?

Table 4: Factors affecting the use of instructional materials in the study area

SN	What are the factors affecting the use of instructional materials for teaching and learning of secondary school Economics in the study area?	MEAN	DECISION
1	Teachers qualification and experience	3.2	Accepted
2	The physical facilities (environment)	1.48	Rejected
3	The number of students in the classes overcrowded has influence on the use of instructional materials	4.00	Accepted
4	Students cultural background influence the use of instructional materials	3.33	Accepted
5	Educational level of the students has influence on the use of instructional Materials	3.85	Accepted
6	Attitude of teachers toward instructional materials production	3.75	Accepted
7	Cost of production and purchase of instructional materials	3.83	Accepted
8	Interest of Economics teachers in improvising instruction materials influence teaching and learning	3.05	Accepted

Table 4 above examined the factors affecting the use of instructional materials in teaching – learning of Economics at senior secondary schools in the study area. The items were rated and it was observed that overcrowded class and cost of production and purchase of instructional materials were the major factors affecting effective use of instructional materials in the study area. Also it was found out that attitude of teachers toward instructional materials production, students cultural background, teachers qualification, experience and interest of Economics teachers in improvising instruction materials influence the use of instructional

materials in teaching and learning of Economics in the study area, these factors are above the criteria mean of 3.00.

Decision

The findings of this study show that instructional materials are available for the teaching and learning of Economics at Senior Secondary Schools in Kano State but they are not inadequate. This finding corroborates that of Adelusi (2006) and Adebule (2009) instructional materials are very few for teaching and learning in Nigeria schools, that is, instructional materials are not adequate for teaching and learning. The available instructional materials were not functional as almost all the teachers make use of textbooks, diagrams, charts and posters more than all the other materials, this means that the few available materials were not put into good use. This could be as a result of power failure, inability to use the materials or ignorance of their importance to teaching as in the case of the internet services according to Ayoola (2015).

The study also further discovered that instructional materials are very important to influence students' retention, acquisition of knowledge, competency, simplify and clarification of complex issue in Economics. This finding was buttressed by Adeyemo (2005) who stated that instructional materials should be used to supplement oral explanation and descriptions.

It also was observed that overcrowded class, cost of production and purchase of instructional materials were the major factors affecting effective use of instructional materials in the study area. Also it was found out that attitude of teachers toward instructional materials production, students cultural background, teachers qualification, experience and interest of Economics teachers in improvising instruction materials influence the use of instructional materials in teaching and learning of Economics in the study area. This finding agreed with Bakare (2006) who listed factors affecting the use of instructional materials to include; nature of the subject matter, objective to be attained, interest, teachers' ability and so on.

Conclusion

Based on the findings in this study, conclusions were drawn: There are inadequate instructional materials and resources for the teaching and learning of Economics in schools which is one of the national challenges facing educational system in the nation. Most teachers do not use the available instructional materials effectively, shows the importance of using instructional materials in teaching – learning of Economics at senior secondary schools in the study area, the result showed that instructional materials are very important to influence students' retention, acquisition of knowledge, competency, simplify and clarification of complex issue in Economics. Instructional materials were very important to influence teaching and learning of Economics as they can simplify and clarify what is complex and difficult to express in words. When instructional materials are used it will address some national challenges in educational system like mass failure in education and falling standard in education.

Finding from the analysis showed that effect instructions in these schools are poor due to lack of instructional materials, unqualified and teacher's attitude towards the teaching. Teacher's attitude towards the student in effective teaching and learning is very poor, nobody wants to improvise material or use teaching aids related to the topic therefore making the teaching very boring to the students. In general, teaching and learning will be better in Economics provided they are allowed to interact or participate effectively in the teaching – learning process through the use of instructional materials.

Recommendations

Based on the results of the findings of the study it becomes necessary to make the following recommendations which are considered essential to address national challenges.

1. The school administrators should made available instructional materials in teaching and learning in order to address mass failure and falling standard in educational system in the nation.
2. The public and private secondary administrators should admit a side able number of students in the class to avoid overcrowded class which is a national challenge.
3. The school administrators should trained and re-trained teachers the importance of use of instructional materials in teaching and learning process, this will address mass failure in the educational system.

REFERENCES

- Abiodun, S.A., Oyebanji, B. & Audu. F. R. (2000). Instructional Materials. *Journal – Teachers Periscope of NUT*, Vol. 2. (2), 227-229.
- Abolade, G.O. (2009). The Training of NCE Mathematics Teachers. A Focus on Instructional Materials. *ABACUS Journal of Mathematics Association of Nigeria*, 22(1), 98-105.
- Adebule, B. C. (2009). The Instructional Material Accessibility Art (IMAA). Retrieved from <http://www.tsbri.edu/textbooks/afblimaa/summary.htm>. On 09/07/2016.
- Adelusi, S.O. (2006). The need to Improve Instructional Strategies in Nigerian Secondary Schools. *Ife Education*, 1(1), 31.
- Adeyemo, P.O. (2005). *Principles and Practice of Education*. Ado-Ekiti: Omolayo Standard Press, Nigeria.
- Afolabi, S. S., & Adeleke, J. O. (2010). Assessment of Resources and Instructional Materials Status in the Teaching of Mathematics in South Western Nigeria. *E- Journal of Scientific Research*, 43(3), 406-410.
- Agina-Obu, I. (2005). The place of Instructional Materials in Curriculum Development. *Education and Development*, 2 (2). 503-510
- Ajayi, Y.A. & Ayodele, J. A. (2008). *A Guide for Effective Teaching*, Lagos: IDEMAC Nigeria Ltd.
- Ayoola, E. O. (2015). Availability and Teachers' Use of Instructional Materials and Resources in the Implementation of Social Studies curriculum. *Review of European Studies*, 6(2), 190-197
- Bakare, G.M. (2006). *Poor Academic Performance, Aetiology, Diagnosis and Remediation*. Ibadan: University Press.
- Enaigbe, R.O. (2009). *Curriculum Implementation and Method of Instruction*, Lagos: Green Line.
- Fadeiye, C. M. (2005). Strategies for Managing School Curriculum and Resources for National Building *Nigerian Journal of curriculum and instruction*, 10(1), 51.
- Ibeneme, B.G. (2000). Effects of Instructional Materials Usage and Teachers' Quality on Students Performance in Science in Senior Secondary Schools in Zaria LGA of Kaduna State. Unpublished M.Ed. Thesis, A.B.U. Zaria – Nigeria.
- Ikerionwu, T. F. (2000) *Aids for Teaching and Learner: Instructional Materials and Educational*, Ibadan: TYUFLIES ltd.
- Isola, O.S. (2010). Effects of Instructional Materials on Students Performance in Economics in Secondary Schools in Ilorin South LGA of Kwara State. Unpublished PGDE Project, UNAD.

- Kadzera, C. M. (2006). Use of Instructional Technologies in Teacher Training Colleges in Malawi. Dissertation submitted to the Faculty of Virginia Polytechnic Institute and State University, Blacksburg, Virginia.
- Kochhar, L. M. (2012). Teaching Tools Teaching in the Secondary School. New York: Macmillan publishing co. Inc.
- Ogbondah, E. O. (2008). Availability and Teachers' Use of Instructional Materials and Resources in the Implementation of Social Studies in Junior Secondary Schools in Edo State, Nigeria. *Review of European Studies*, 3(2), 90-97
- Olumorin, D., Yusuf, T.M., Ajidagba, M. & Jekayinfa , K. (2010). "Trends in Students' Enrolment and Performance in the Senior School Certificate Examinations in Agricultural Science in Kwara State. Ilorin *Journal of Science Education (IJOSE)*,5 (2), 70-85.
- Oluwagbohunmi, A. S & Abdu-Raheem, A.Y. (2014). *Issues in Nigeria Education*. Ilorin: Kewulere Press.
- Osuala, E.O. (2005). *Introduction to Research Methodology* (3rd ed.) (pp. 218-235). African: Fep Publishers Limited.
- Riveire, G.D. (2006). *Instructional Median and the New Technologies of Instruction*. New York: New York University Press.

THE ROLE OF FAMILY IN CURTAILING DELINQUENCY BEHAVIOURS AND DRUG USE AMONG ADOLESCENTS IN THE MIDST OF INSECURITY IN THE NORTH-WEST, NIGERIA

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Abstract

The role and functions of family are significant in shaping and molding a child's personality, identity, behavior and attitudes. Evidently, Parental socialization goals and objectives comprise of personal beliefs and attitudes about parenting and their expectations for their children. The adolescent's involvement in delinquent and substance use behaviors particularly in the North-West of Nigeria may equally be viewed from multiple influences of the family and the surrounding environments. For instance, even though peers may have significant influence on adolescents' delinquency, positive parenting behaviors such as parental involvement, supervision, authoritative parenting and known expectations have equally a significant impact on the reduction in the adolescent substance use and delinquency. Based on these assumptions, it is evident therefore; environmental and family characteristics protective and risk factors may contribute to the use or avoidance of substances use and delinquency in the midst of the current in security situations in Nigeria specifically in the North-west of the country. There is urgent need for collective efforts to address the challenge to which the family has a greater role to play. In view of that, the present study has provided comprehensive discussions and empirical reviews on adolescents' delinquency and substance use in relation to family characteristics including parenting styles, parental involvement, supervision and other forms of parent child relations and their impact on substance use and delinquency. The paper therefore suggested that attention and awareness of parents and other stake holders about their roles and functions in tacking and curving the tremendous adolescents' substance use and delinquency problems should be encouraged in an effort to address the insecurity in the North-west zone of Nigeria.

Key Words: *Drug Use /Substance Use, Protective factors, Parental Involvement, Delinquency*

Introduction

Many societies have continuously seen delinquency as a major and serious problem which makes no difference in the society. Research investigations concerning delinquency among adolescents in Nigeria believed that there are two main categories of delinquent behaviors that Nigerian adolescents are engaged. These included criminal and status offences (Eke, 2004). The criminal offences include kid napping, stealing, arson, rape, drug offences and murder, burglary, pick pocket, and armed robbery. Status offences however include: running away from home, malingering, truancy etc. Relatively, any form of behavior that falls short of societal norms, values, beliefs and expectations are undesirable behaviors and considered delinquency (Okorodudu and Okorodudu, 2003). Relatively Onyechi and Okere (2007)

found out that most of the deviant behaviors exhibited frequently and persistently in the classroom situations included, walking out on the teacher, noise making, sleeping in class, pinching, aggression, vandalism, pilfering, lies, truancy, cheating, immorality, alcoholism, use of drugs, cultism, examination malpractice and many others. Boroffice (2004) also maintained that factors such as biological social, view of self, attitudes, beliefs, are some of the factors that predispose adolescents to unhealthy behaviors.

For quite some few decades ago in North-west Nigeria, there has been a noticeable increase in delinquent behaviors among the young adolescents and this led to increasing concern of the Police and the general public on the seriousness of adolescent crime and conduct problems long time ago (Wu, Chia, Lee and Lee 1998). To date, the problem of delinquency have persisted in current insecurity challenges have come out as a disturbing phenomenon that affects all segments in public life of Nigerians especially in the North-West Nigeria.

The main objective of the present study is to explore and discuss extensively some empirical explanations of family background factors that predict Adolescent delinquency behavior and Drug use. The study focuses on issues concerning with parenting characteristics in the literature that predisposes the adolescents to delinquency and drug use. Involvement of adolescents in delinquent activities is on the increase in Nigeria. The last two decades witnessed crimes ranging from minor stealing to major robbery and killing perpetuated by teens. There has been increasing concern of the Police and the general public on the seriousness of adolescent crime and conduct problems (Wu, Chia, Lee and Lee 1998).

Adolescents

The Adolescence stage is the most important period of human life in general. The child experiences a number of changes in this transitional period. The period runs between childhood and adulthood or period of teenage. "Adolescence is that span of years during which boys and girls move from childhood to adulthood, mentally, physically, emotionally and socially". Chronologically, adolescence time comes roughly in between the years from 12 to the early 20s. Perhaps this varies from culture to culture, depending on the socio-economic conditions of a country. The adolescent's drug use and delinquency may be examined by various factors in the person and his social environment. Researchers have provided evidence that drug use and delinquency behaviors are most likely linked with social influence variables including family drug use, peer drug use, and peer pressure to try drugs (Farrell, Danish, & Howard, 1992), however, less research attention has been given to the interplay of these antecedents. For instance, social influence has virtually been considered as the most complex factor in the development of drug use and delinquency. The Adolescent is confronted with quite a number of developmental tasks to prove themselves in their reference groups, as (Yu & Williford, 1992). If the most attached group includes those peers who value drug use as an 'adult activity' or as signs of maturity and total independence from parents, then the adolescent may likely try to meet such expectations. Role conflict may however occur because when the family tradition and norms contradicted the deviant peer group norms, it may likely require considerable coping efforts until the adolescent eventually conforms to the family or the peer encouragement one or the other (Wills et al., 1996).

Studies looking at the psychological health among adolescents indicated that drug use and abuse is related to personal and social maladjustment (Shedler & Block, 1990). Other studies showed that male adolescents tend to use drugs for pleasure and a sense of belonging, while the female's adolescents use drugs to relieve stress and cope with the problems that they face (Mooney et al., 1987; Newcomb et al., 1987; Novacek et al., 1991). Research evidence

therefore suggests that both male and female adolescents use drugs to cope with stress (Kilpatrick et al., 2000).

Empirical studies have provided enough evidence on parental behavior and attitudes and its significance in predicting substance use and delinquency among the adolescent (Brook, et al., 1990; Foxcroft & Iowe, 1991; Wilson, 2003; Pearce et al., 2003; Ainette & Mendoza, 2004; Diaz, 2005; Ma & Huebner, 2008). In the words of Aarons and Colleagues (2008), there is a severe lack of research on risk and protective factors of adolescent's delinquency from the family perspectives, that may be applicable in the adolescent population in the north-west of Nigeria, especially looking at the circumstances and manner of drug use involvement among the young adolescents (NDLEA, 2011; 2015; 2019).

Perhaps, when people are asked a question what they may think are the main causes of crimes, more especially among the adolescents, many people often hold the opinion that it is as a result of poor parental child rearing methods, and especially poor discipline or control of children (see Farrington, 2002). In 1988, the British newspaper Mail on Sunday reported the results of a survey of a quota of a sample of over 1,000 adults who were asked what they thought were the main causes of violent crimes. The most popular cause as nominated by almost 53 percent of the respondents was lack of parental discipline, and then followed by poverty (20%), television violence (19%), lack of school discipline (15%), broken homes, (13%), alcohol or drugs (13%).

A child's home and family are the centre of development, and one of the most important functions of the societies matrix is to provide structure and guidance in an effort to encourage and assist the children in their socialization and identity development (Stern., et al, 1984). The family is also charged with transmitting values held by the society as a whole, and must also attempt to create a barrier against society's influence of deviant behaviors (Toby, 1957). Research studies shows that a family structure is equally an important factor in explaining delinquency among the adolescents (Price & Kunz, 2003). Other researchers believed that, children that were known to grow up in homes that is characterized by lack of warmth and support, and as well whose parents lack behavior management skills, and of course whose lives are characterized by conflict or mal treatment will more likely be delinquent, whereby, a supportive family can protect children even in a very hostile and damaging external environment Smith & Stern (1997, pp.383-384).

The problem of delinquency and substance use is very common and the talk of present time more especially in the North- West Nigeria. Unfortunately, larger percentages of people that are involved are the teenagers and adolescents. Perhaps, it is needless to mention that thousands and thousands of young adolescents are unexpectedly misled abused, and subjected to partaking in live destruction anti-social behaviors causing a lot of damage to the human life and property. This is a very serious problem and an enormous challenge to parents, teachers, governmental and even non-governmental agencies that are specifically concerned and interested in social welfare, and responsible for shaping the personality of the young generation. There is an urgent need to understand the phenomenon of delinquency especially from the social learning perspective of family. Research demonstrates that behavioral problems especially during childhood period predict subsequent delinquency and criminality. As such, some of these behavior problems appear to stem from various forms of parental and family involvement. The home environment is the natural school for the children. It is through bonding with the parents that children internalize the moral values that are likely to shape their future conduct.

Substance Use or abuse and Drug use

The term substance is a kind of chemical substance that crosses the blood-brain barrier and acts primarily upon the central nervous system where it affects brain function, which results in changes in perception, mood, consciousness, cognition and behavior, World Health Organization (WHO, Expert Committee on Drug Dependence, 2008). These substances may be used recreationally to purposely alter one's consciousness may be for ritual or any other purpose as a tool for studying or augmenting the mind, or therapeutically as medications. These substances are categorized into three depending on their use, and these include Stimulants, Depressants and Hallucinogens.

However, the challenges in defining substance "use" and or "abuse" has not been taken up by many policy makers, researchers or advocates of drug control. The task to define substance use is difficult, political and culturally specific, in the sense that substance use or abuse may be over exaggerated by politicians and advocates of drug control, and underestimated by the users and abusers themselves. Perhaps this created a wider divide between those groups who need to join together to solve the problem, like in the current study. The World Health Organisation (WHO, 2008), based on the evidence so far advanced have reached agreement that substance use cannot be separated from drug use in any general way because of different cultural and legal attitudes to drugs in different countries (Tomasevski, 2000) in Schechter & Joyner, pp.859-906), including Nigeria. This assumption seems to coincide with a definition that refers substance use as a non-medical self-administration of drugs in order to produce psychoactive effects, intoxication or altered body image, despite the knowledge of its potential side effects, by the American Psychoactive Association Practice Guidelines (2006). The current study lends support to the definition as "drug use" and will be operationalized and applied in the current study.

The use of substances among people generally, and especially the adolescents can have both immediate and long-lasting negative consequences on the youth and the larger society. From literature review, Falcon (1988) cited by Sambo (2008) suggested that chronic substance use is responsible for serious irreversible change to adolescents physical and psychological wellbeing. Besides that, however, the use of some drugs could be beneficial or harmful depending on the manner of its use. Researchers all over the World have indicated that adolescents who use substances are at risk for many problems. For instance, apart from being the cause to school underachievement, anti-social and personal health problem into (Gilvarry & McArdle, 2007; Merline et al., 2004), substance use is also associated with high cost in the treatment of social service, criminalities and health services as maintained in research (Monge, et al., 1999). Many studies shows that adolescents psychoactive substance use leads to problems including school drop-outs (Wright & Fitzpatrick, 2004), increased motor vehicle accidents (Lansford et al., 2008), delinquency and poorer physical health (Ford, 2005).

Persistent Substance use among the Adolescents in the North-west, Nigeria

In Nigeria for instance, research shows that, besides the existing legislation against psychoactive substance use (Alemike, 1998), and upon all the efforts of various Nigerian tiers of government and the National Drugs Law Enforcement Agency (NDLEA, 2010; 2015;2018) to stem its tide in the country, there has been a consistent rapid rise in the number of cases especially among the young adolescents at the age of 10-24 years (NDLEA, 1992). The widespread problem of Adolescents substance use in Nigeria is particularly disturbing and more frequent in the north-west zone of Nigeria as reports have shown.

Although substances use studies among school and out of school adolescents have been investigated across many populations in Nigeria as mentioned earlier, the population groups, particularly the adolescents in the North-west zone of Nigeria receive less attention on research studies on predictors of adolescents substance use from the family perspectives despite the increasing reports of constant arrest of drug users who are mostly youth in the area as indicated by the NDLEA, (2008;2010; 2015). Many studies in Nigeria have now confirmed that adolescents across all communities including those in the north- west zone in Nigeria now constitute the high-risk group of substance use (Morokinyo & Odejide, 2003; Odejide, 2002), with reported female involvement (Adelekan, Makanjoula & Ndom, 2001).

The north-west zone area, comprising Kano, Katsina, Kaduna and Sokoto Zamfara, Kebbi, Jigawa and Sokoto states, had been reported to championed drug consumption especially among the youths (NDLEA, 2011; 2015;2018). Indeed, within the north-west zone of Nigeria, the issue of high frequency and multiple substance use is an open talk of public outcry as reported by the media, which seemed unpopular for a wider research attention. For instance, a report from Nigerian Drug Statistics (NDLEA, 2008), the agency declared that the north-west zone of the country has the highest number of substance users who are mostly adolescents. Within the zone, in 2008 alone, the NDLEA recorded a statistics of 755 drug abusers representing 37.47% of drug victims in the country, whereby other zones; south-west, south-east, north-central and north-east zones recorded 17%, .32%, 13.5%, 11.71, and 8.54% of drug abusers respectively. Added to that, some few years ago, an official reports from the government agency that oversee the affairs of illicit drugs use control in Nigeria, the National Drugs Law Enforcement Agency (NDLEA, 2010), reported that in 2009 alone , the agency arrested over 2,042 suspected drug use offenders from north-west part of the country, that emerged with the highest drug users.

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Adolescents' and Delinquency

Adolescents irrespective of their culture, gender or any other religious affiliation can partake and exhibit dangerous suicidal tendencies, juvenile delinquency, vandalism, destruction of public property, maiming or murder of parents and violence against the larger society (Okorodudu and Omoni, 2003). This can be seen and understood from daily reports of criminal and banditry activities that is continuously reported in the north west part of Nigeria (UNODC, 2012). For instance, juvenile delinquency is noted by Ekojo and Adole (2008) as gang delinquency. This kind of delinquent refers to group of youths and adolescents who exhibit criminal behaviors. Adolescence is a period of stress and storm. Such period is the type that is characterized by rebelliousness (Okorodudu and Okorodudu, 2003). It has been noted by researches that environmental, peer group, social, physical, psychological, drug use and the family can predispose adolescents into delinquency and other anti-social behaviors. On the other hand, adolescents growing up in poverty are also at risk of a number of negative outcomes, including substance use (Arnold & Doctoroff, 2003) and violent behavior (Dornsburch et al., 2003). Moreover, it should also be noted that children who are rejected by their parents, grow up in homes of considerable conflicts, and are inadequately supervised are most likely at greatest risk of becoming delinquents. There appears to be a cumulative

effect such that the presence of more than one of these negative family attributes further increases the likelihood of delinquency. However, not all children follow the same path to delinquency; different combinations of life experiences may produce delinquent behavior. In the same manner as well, positive parenting practices in the early years and later in adolescence appear to act as buffers preventing delinquent behavior and assisting adolescents already involved in such behavior in desisting from further delinquency. In view of that, it is obvious that every effort is suppose to be made in order of strengthen the family with the hope of combating delinquency and upon all bringing about more stable environment to learn and grow.

Relatively, in Nigeria, the government had devised and employed several measures aimed at curbing delinquency especially among our adolescents in the society but to no avail. Examples of such included the establishment of juvenile justice; promulgation of juvenile laws and courts, establishment of remand homes establishment of security and law enforcement agency etc.

Many researchers agree that the foundation of adolescents delinquency is rooted in the kind of home that the adolescent is brought up (Odebumi, 2007; Otuduah, 2008; Okpako, 2004, Utti, 2006). In the light of this, religiosity of the parents can play a greater role in shaping the behavior of the children in such a way that the children can be brought up in proper religious guidance, adjustment and healthy habits. In the African context, parents expand beyond immediate mother and father to include members of the extended family neighbors and every other person who in one way or the other is involved in the upbringing of the child Okpako, 2004). In this regard therefore, the basis for any good behavior orientation in the adolescence is founded on positive parenting with good religious background.

Large Family size and Delinquency

In the recent decades, according to research, issue of large family size (referring to a large number of children in the family) is a relatively strong and highly replicable predictor of delinquency and substance use (Fisher, 19984). Farrington (1992) in a research investigation founded that large family size predicted self-reported delinquency as well as convictions. Research has also confirmed that larger family size is an important independent predictor of convictions up to the age of 32 years in a logistic regression analysis; 58 percent of the boys from large families were convicted up to this age (Farrington, 1992). One important note to reckon with regarding family size is that there are many possible reasons why a large number of siblings might increase the risk of child's delinquency. It is normal to say that as the number of children increases in any family, the amount of parental care and attention that may likely be given to each child decreases. Moreover, as the number of children increases, the whole household activities tends to become more overcrowded, thereby leading to increases in frustration, irritation, and possibly conflicts. Relatively, Brownfield and Sorenson (1984) reviewed many explanations for the link between large family size and delinquency, including those focusing on features of the parents (e.g. criminal parents, teenage parents), those focusing on parenting (e.g. poor parental supervision, disrupted families), and those focusing on economic deprivation or family stress

Child rearing Methods and Delinquency

Several child rearing methods predicts a child's delinquency. The most notable and significant dimensions of child rearing practice are the supervision of monitoring of the children, discipline or parental reinforcement, warmth or coldness of somewhat emotional relationships and parental involvement with the children. For instance, in a particular study

Routhbaum and Weisz (1994) maintained that the strength of associations between parent and child measures was greater when parenting was measured by observation or interview than when it is measured with questionnaires. Notably, parental supervision denotes to the degree of monitoring by the parents of the child's activities, and their degree of watchfulness or vigilance. These entire child rearing methods, poor parental supervision is usually the strongest and most replicable predictor of offending (Farrington & Loeber, 1999; Smith & Stern, 1997). It also typically predicts a doubled risk of delinquency. Many researchers have shown that parents who do not know where their children are when they are out, and parents who let their children roam the streets unsupervised from an early age, tend to have delinquent children. In the same manner, the parental discipline simply refers to how parents react to the child's behavior. It is evident that harsh or punitive discipline (involving physical punishment) predicts a child's delinquency, as in support of Haapasalo and Pokela (1999). Relatively, in a follow up study of 700 Nottingham (UK) children, John and Elizabeth Newton (1989) found that physical punishment at the age of 7 and 11 years predicted later conviction; 40 % of the offenders had been smacked or beaten at age 11 years, compared with 14 % of non-offenders. Research studies in psychology have continuously put more emphasis on parenting styles rather than parenting practices. For instance, some decades ago, Diana Baumrind (1966) initially categorized three main broad styles of parenting; authoritative, authoritarian and permissive parents. In nutshell, the authoritarian parents are reported to be controlling, punitive, demanding and rather cold; the authoritative parents set firm rules but also warm and supportive and allow the children some autonomy. The permissive parents however, are rather lax, non-punitive, and warm. The authoritative and permissive parents have sound communication with their children, negotiating, explaining, and being sensitive to the child's needs. Despite that parenting styles in psychological studies remain influential; these studies have rarely investigated criminological research. However, in a Cambridge Study it was found that having authoritarian parents was the second most important predictor of convictions for violence (Farrington, 1994). Moreover, research have found out that having authoritarian parents was the most important childhood risk factor that discriminated between violent offenders and frequently convicted non-violent offenders (Farrington, 1991). Explanations relating to the association between child rearing practices and delinquency focus mainly on social learning theories. The social learning theory suggests that children's behavior depends on the parental rewards and punishments and on the models of behavior that parents represent (Patterson, 1995). In this regard, children will tend to become delinquent if parents do not respond consistently and contingently to their anti-social behavior and if parents behave in an anti-social manner.

The Role of Family in the Live of the Adolescent

Families and any type of family environment serve as one of the strongest socializing forces in a person's life. The family helps greatly in teaching the children to control unacceptable behavior, delay gratification, and also respect the rights of others in any environment. On the other way, the family can also teach children aggressive, anti-social and violent behavior. Among the adults' lives, family responsibilities may provide an important stabilizing force. Thus, family life may directly contribute negatively to the development of delinquent and other anti-social criminal behavior tendencies. This is in support of research investigation that indicated undisciplined children, ill prepared to avoid temptation in the World, descended into lives of crime (Rothman, 1990; 66)

Moreover, among several research studies that influence adolescents' development, the family virtually represents one of the most significant factors in the young child life. Naturally, human beings have been described as social beings whose normal development is

only possible within a social context. For the child, the most immediate context normally is the family, which is subject to the wider and ever-changing influences of the neighborhoods, community and the society (Papalia et al., 2004). In an attempt to describe family, (Santrock, 2005) maintained that family “is a constellation of subsystems understood in terms of generation, gender and roles” and that the division of labour among its members define particular sub units some of which are dyadic (involving two people), and some involving more than two. This demonstrates that the family is a complex system that is dynamic and reflecting the changing world. This dynamic nature of the family affects not only its form and structure, but its definition as well. The different types of family forms results from the changes in the traditional system influenced by such factors as political upheavals, economic depression and globalization (Santrock, 2005).

In the family setting, understanding the child involves the need to look and study the family environment, its atmosphere and structure which is generally influenced by what goes on beyond the walls of the home (Papalia et al., 2004). Similarly, there are other layers of influences in the family that includes parents work, socio-economic status and societal trends such as urbanization, social network of friends, all of which help shape the family environment and thus, children’s development.

Families in general, plays major and significant roles in the socialization of children behaviours (Rollins & Thomas, 1979), whereby children largely remain dependent on their families, especially parents, for support and guidance as supported in the views of Maccoby and Martins (1983, pg 2);

“ psychological studies of socialization in the family setting have been concerned with how parental behavior support children’s learning to inhibit behavior that would be irritating or injurious to others, and at the same time fosters the acquisition of the positive behaviors that society demands , including helpfulness and thoughtfulness towards others , self-reliance , acceptance of responsibilities , and the acquisition of skills that will support successful adult functioning.

Family Socialization and Adolescents Substance Use and Delinquency

Empirical studies have suggested enough evidence on parental behavior and attitudes and its significance in predicting substance use and delinquency among the adolescent (Ainette & Mendoza, 2004; Diaz, 2005;Ma & Huebner, 2008).For instance, in the words of Aarons and Colleagues (2008), there is a severe lack of research on risk and protective factors of adolescent’s substance use and delinquency from the family perspectives, that may be applicable in the adolescent population in the north-west of Nigeria, especially looking at the circumstances and manner of drug use delinquency involvement among the young adolescents (NDLEA, 2011; 2015;2019). Many research studies maintained that, as children continue to develop into adolescence, other extra-familial influences increases, but yet the family remains important and a major agent of socialization (Steinberg, 1987; Gecas & Seff, 1990). As such, the process of family socialization becomes social and developmental that significantly influences an individual’s present and future social and health behaviors, including drinking, smoking and other psychoactive substance use. Indeed, across the area in prevention and control, a growing interest exists in engaging parents to reduce their adolescent’s involvement in substance use, Northern Centre against Sexual Assault (NCASA, 2001).

The assumption that parents can influence their adolescent’s likelihood of substance use and delinquency is not consistent especially when at the mainstream view (Holmbeck & Hill,

1988), that adolescence is a marked period during which parental influence inevitably wanes. Researchers showed that, until during the 1980s, studies concerning adolescent's development were generally based on a conflict-oriented model. And most of the studies during the era focused specifically on generational disparity in values, decline in parenting influence, and conflict between parents and adolescents (Collins, 1983). The studies during that time foster a negative stereotype of parent-adolescent relationship. Subsequently, a shift on research emphasis during the later times of 1980s, more other leading developmental psychologists examined the currently alternative and more positive perspectives in parent child relationship on adolescent's outcomes (Collins, 1980; Baumrind, 1991).

In the previous decades, research studies have shown that adolescents generally experience continuity in the relationship with their parents and continued adherence of parental values (Collins, 1980; Steinberg, 1987). The previously stereotypic view of adolescence now assumes a decline in parental influence, both previous and current researches in adolescents' development now indicates that it is common for parents to remain influential (Collins, 1990; Brown, Mounts & Lamborn, 1993; Santrock, 2005), and is equally in support of the current study. Previous studies concerning substance use studies have suggested that the presence of certain risk factors increases an individual's likelihood of engaging into drug use (Liddle et al., 2001; Weinberg, 2001). Some of these identified risk factors include parents (Simons-Norton, Crump, Hayne, & Romero, 2006) and family (Brook et al., 1990; Liddle, 2001). Researchers have identified both risk and protective factors influencing the use of drug (Hawkins et al., 1992; Young et al., 2002). The risk factors here indicate that the increase in a specific variable is associated with increased likelihood of psychoactive substance use. A protective factor denotes to the increase in a specific attribute or behavior is associated with decreased likelihood of psychoactive substance use. Empirical studies have proved that the more adolescents are exposed to risk factors, the greater chances of developing substance use and abuse, co-morbid mental health dis-orders and other related problems (Anthony & Petronis, 1995; Graham, 1996

The family is considered as the first major agent of socializing all individuals. Here the parents as resourceful provides an ascribed social status to the young members and therefore play a key role in many aspects of the socialization. The parental socialization goals and objectives comprise of personal beliefs and attitudes about parenting and their expectations for their children. Evidence suggests that these goals and objectives influence parenting (Darling & Stainberg, 1993). Studies therefore that examined the relationships among parental socialization goals and parenting practices also shows that ; (1) that there is variability in parental socialization goals, (2) also, the variability is related to cultural context, (3) and that the variability in socialization goals is associated with variability in parenting practices (Rothbaum, 2005; Chao, 2000). Researchers therefore have provided suggestions as regards to consequences on negative and positive behaviors towards adolescents. Some studies (Lee et al., 2006), demonstrated that negative parent behaviors have been shown to be positively correlated with negative adolescents' development and emotional growth, and therefore increasing the likeliness for poor mental health. Researches concerning family and home background influence on children behavior outcomes have come up with varying discoveries and assumptions. Many empirical studies in Nigeria believed that the foundation of adolescent delinquency is rooted in the kind of home environment that the adolescent is brought up (Odebumi, 2007; Otuadah, 2008). Desirable behavior orientation and other well-meaning adolescents' attitudinal development is fundamental on positive parenting. In a particular *investigation*, Okpako (2004) opined that the parents should be blamed and be made to take blame for the misfortune that befalls their adolescents from the onset.

Parenting and Adolescents' Delinquency

The parenting characteristics is a more complex activity that involves different and specific behaviors that work individually and collectively to influence the child outcomes. Parenting has been described as a challenging task that ascribes responsibilities to parents or other adults to take care of and nurture their children to become productive and responsible citizens. Research studies showed that parents are often faced with the complex task of parenting their children within a culture is notably dissimilar from their culture of origin, Howard, Beaumont & Walker (2007). Relatively dysfunctional homes characterized by divorce or death of parents may prong adolescents into participation in delinquent behaviors (Boroffice 2004). Moreover, parental separation may subject adolescents' embarrassment, depression (Boroffice 2004, Hyssong, 2000) and this can lead the adolescents miss school, perform poorly academically and participate in delinquent behaviors (Atkinson, 2004). Other research investigations maintained that harsh and inconsistent parenting is the main cause of conduct disorders whereby the persistent aspects of parental rearing styles of children with strong discipline; parental disharmony; rejection of the child and inadequate involvement in the child's activities cause delinquency among adolescents (Okorodudu & Okorodudu, 2003).

Researcher's believed that a large percentage of all juvenile delinquents come from homes that lacked normal parental love and care. Therefore attention, love and warmth go a long way in supporting the child's emotional development and adjustment (Odebumi 2007). Normally, children during the adolescence period require parental love, care, warmth and serious attention to adjust adequately, in the environment in which he/she finds him/herself. Parents have major roles to play in the adjustment process of adolescent. Perhaps many of the behavioral challenges among the deviant adolescents are rooted in their homes (Onyechi and Okere, 2007). Otuadah (2006) noted that when the relationship between the parents and the adolescent is warm, then there is tendency that it may create a healthy environment for the development of the adolescent. Adolescents who manifest traits of friendliness, cheerfulness, positive emotions and good maturity, show evidently, that such adolescents come from homes where they are accepted and loved as in support of many studies (Otuadah, 2006). Meanwhile, Okpako (2004) in a particular study noted that a child that is well brought up is more likely to remain a source of joy and happiness for such family.

Family (Social Learning) System Theory

Within the family system theory, the family is more than just the basic individuality of its members but at the same times the behaviors and the beliefs that are and become transactional (Infante, Rancer, & Womack, 1992). As stated by Madden-Derdich and Herzog (2005), each family unit has its own individualistic characteristic and behaviors that are specific and different from other families. Therefore, within the whole system, other sub-systems are organized which are smaller sets of family members who have a special "role" aside from but within the family system (Madden-Derdich, Estrade, Updegraff, & Leonard, 2005). This implies that, each member of a family system brings more than just individual differences and behaviors that influence each other as well as being influenced by other systems. This also relates to what has been termed as "isomorphism" in the family system theory

Several family factors appeared to be influential in the genesis and exacerbation of a protection against adolescents' delinquency and substance use. For instance, parenting characteristics that may reduce risk of drug use, unhealthy relationships with parent and probably improper child upbringings and other practices are more likely to be associated with adolescents' delinquency. Many research studies believed in the direct effect of parental

monitoring on levels of adolescents' delinquency. Some studies in the family system theory approaches have mapped a process of multidirectional influence among various developmental contexts such as self, peer, and the family (Brooks & Brooks (1996). For instance, parenting behaviors can be understood in terms of factors such as the psychological functioning of the parent (Miller & Prinz (1990) or the different temperament characteristics of the teenager. Studies have demonstrated that parents react differently and have different expectations of teens who are for example aggressive or sociable (Carlo, Roesch & Melby). Parental responses and expectations in combination with adolescent's temperament led to different behavioral outcomes generally for the teenagers. Mounts and Steinberg (1996) present an ecological analysis of interaction of peer and parent influence on the adolescents functioning and drug use. In that study, it was found that if an adolescent has parents who were less authoritative; the impact of having deviant friend was stronger than with teen s whose parents offered more optimal parenting.

The adolescent's involvement in problem behaviors can therefore be viewed from the multiple influences of the family and the surrounding environments. From the views of this framework, solutions that may lead to family distress can derive from many sources. Walsh (2002) asserts that stressors in the family may be multigenerational, with similar patterns parents passed on to their children and many other things. Instances of this could be when the families struggles with a multi-generational issues related to poor parenting, such as the parenting typologies (Baumrind, 1991), parents anti-social behavior or substance use and any other domestic violence. Therefore, based on the assumptions of this theoretical approach, researchers can identify how the environmental and family characteristics protective and risk factors can contribute to the use or avoidance of substances and delinquency among the youths particularly in the north- west Nigeria. From the assumption of this framework therefore, there are several avenues in which parenting influence the degree of positive or negative behaviors of which the adolescents engaged. Parenting behaviors in the area of manipulation, responsiveness, lack of affection and warmth appeared to be some few examples of parenting behaviors which are most likely to influence adolescent's behaviors (Brendgen et al., 2005). For instance, research investigation demonstrated that parents' behaviors are more important than peer behaviors for the life time effects and influence according to adolescents' self-report Wang, Bahr & Marcos {1995}. Additionally, when parents use positive behaviors such as; awareness, attentiveness, mutuality, the parents likely encouraged positive outcomes and behaviors for their adolescents (Loukas & Roalson, 2006). This can easily be seen in the adolescent's degree of self-regulation or self-control in reference to emotional and behavioral status that may be traced back to parental behaviors (Hill, 2002). Research therefore provided evidence that parents who are not warmth and receptive to their adolescents can easily create a negative affect which may likely stimulate a lack of self-control and would therefore encourage problem behaviors such as substance use (Brody et al., 2006).

Conclusion

The current study is concerned and centered on family characteristics and its impact in adolescents' substance use. Meanwhile, the study was conceived out of zeal to investigate adolescents' substance use from the influence of inter personal process of family characteristics and substance use among adolescents particularly among young adolescents in the north-west of Nigeria where the menace of drug use is frequently reported now and then. The main objective of the study was to examine the determinants of family characteristics and home background in the development of adolescents' substance use among students in secondary schools. Other demographic variables such as gender and age of the students were also sought to be likely linked with adolescents' substance use.

It is evident and clear that many factors predict offending, but somehow less clear what are the main key underlying family dimensions to be measured. However, the strongest predictor is usually criminal or antisocial parents. Other strong and replicable predictors included large family size, poor parental supervision, parental conflict, and disrupted families. Several theories were proposed to explain predictors of adolescent's delinquency and substances use. The most popular are the attachment and social learning or family system theories. The social learning theory argue that children fail to learn law abiding behavior if their parents provide anti-social models and or fail to react to their transgression in an appropriate, consistent, and contingent fashion. Therefore, in order to properly advance knowledge about the causal effects of family factors on offending, new prospective longitudinal studies are needed. Moreover, such studies should also aim to estimate genetic influences and should equally measure a wide range of risk factors (individual, family, peer, school, neighborhood, etc). Furthermore, they should also aim to establish independent, interactive, sequential, and reciprocal effects of family factors on offending.

Recommendations

The adolescent time period is characterized by exploring and experimenting new experiences suggesting that the youth curiosity and tendency to explore and experiment with new activities predisposes them to delinquency and other risk behaviors (Buawari, 20013). The present study suggests that the prevalence rate and patterns of adolescents' delinquency appeared to indicate that the problem are real, hence the trend seems ongoing. One of the most important impetus concerning inquiry into delinquent behaviors among the adolescents is evident as regards to growing concern about its negative effects and consequences (Abasiubong et al., 2008). From a number of empirical evidence across the World, multiple and persistent kinds of anti-social behaviors affects close to 5 -10 % of children in developed countries which are also linked to future adult crime, drug use , unemployment and mental disorder (Cohen, 1998; Rutter, Bishop, Pine, Scott, Stevenson, Taylor et al.,2008).This may also apply to Nigerian context because researchers have indicated that the resurgence of social phenomena with risk of people developing mental illness in Nigeria has been attributable to delinquency and possibly substance use (Adamson et al ., 2000; Igwe & Ojinnaka,

Based on the discussions of the present study, it is very important and crucial that parents should lay hands and show special concern and interest in their children's activities, whereabouts and child friends. Despite that it may seem a difficult or boring task, yet it is of considerable benefit to orient oneself to such important aspect because of its impact in normative child up-bringing. Adolescent social and mental health problem is largely rooted from his immediate upbringing in collective family efforts that must be sustainable throughout the family life. Both parents (fathers and mothers) must be involved in the discipline and care of children. With the current trend of delinquency characterized by kidnapping, banditry and other anti-social behaviors by adolescents in the North west Nigeria all hands must be in desk to address the genesis of the problem from the angle of family factors. Moreover, in order to actually manage the delinquent adolescents, it is desirable that people in authority have to be more understanding, more considerate and more scientific in their approach to dealing with the adolescents. Delinquency for instance, is such a behavior pattern that breaks certain rules and regulations or laws of the community and those that were enacted by the constituted authorities. Adolescent delinquency is seen in the behavior of young boys and girls as they break parental rules, teachers, authorities or societal laws. Offences may range from violation of disciplinary measures of the parents to truancy, stealing, robbery and other anti-social undesirable. Moreover, delinquency can manifest as

inhibitions, unmet needs and worries. It could also be as a result of poverty, inequality and scarcity of social amenities including inadequate housing, feeding and other family needs. Any treatment of delinquency in adolescence should be preceded with careful investigation of factors that contribute to such socially undesirable behavior. Many offences which are seemed insignificant were mostly ignored and allowed to continue unchecked and unconcerned, until when it grew up and becomes disastrous as the case with the current insecurity problem in Nigeria, particularly in the North-West.

A fundamental and most significant aspect in this discussion is the distinctive approach in the parent -child relationship. The dynamic world of our time continuously demands changes from our social relationships especially when it comes to issues concerning delinquency and substance use problems, particularly among young adolescents. The horrifying magnitude and consequences of delinquency and substance use on our health, peace and economy is a clearly evident by the growing insecurity, and other anti-social activities particularly in the North-western Nigeria. The frequent cases of kidnapping and banditry activities in the North west of Nigeria is a clear manifestation of unhealthy manner in which our young adolescents were brought up in their family environment. This problem must be addressed by government in collaboration with religious leaders (both Muslims and Christian faith) and the family with proper understanding and sense of responsibility. This paper is inclined to call the attention of government and the NGOs to organize a forum under the umbrella of ministry religious affairs and youth development with family and community as well as religious leaders partnership with well-articulated and clearly define goals of the need for (i) awareness and enlighten campaign for parenting as a qualification and not just a figure head.(ii) the government and stakeholders to design well documented procedure, strategies in order to address delinquency and substance use problems with sustainable agenda to enhance family patronage in adolescent functioning.

REFERENCES

- Abiodun, Adelekan, Ogunremi, Oni & Obanyan (1994). *Pattern of Substance Use Among Secondary School Students in Ilorin, Nigeria. West Africaj J. Med.*13; 91-7.
- Abasiubong, F, Idung, A. U., Udoh, S. B., & Ekanem, U.S (2012). *Parental Influence on Substance Use among people in Niger Delta Region of Nigeria. African Journal of Drug and Alcohol Studies.* 11 (1); 9-16.
- Adelekan, M., Ndom, R., Makanjuola, A., Parakoyi, D., Osagbemi, G., & Fagbemi, O. (2000). *Trend analysis of substance use among undergraduates of university of Ilorin, Nigeria, 1988-1998. African J Drug Alcohol Studies, 1, 39-52.*
- Amoateng, A. Y., Barber, B. K., & Erickson, L. D. (2006). Family predictors of adolescent substance use: the case of high school students in the Cape Metropolitan Area, Cape Town, South Africa. *Journal of Child and Adolescent Mental Health, 18*(1), 7-15.
- Baumrind, D (2005). Patterns of parental authority and adolescents autonomy. New directions for child and adolescents development. 2005 (108), 61-69.
- Brown, Stephen, E, "Social Class, Child Maltreatment, and Delinquent Behaviour" *Criminology* 22(2) (May); 259-278.
- Darling, N., & Steinberg, L. (1993). Parenting style as context: An integrative model. *Psychological Bulletin, 113*(3), 487.
- Farrington, D P (1992) Juvenile Delinquency. In J C., Coleman (Ed), *The School years* (second edition pp 123-163. London, UK; Routledge.
- Farrington, D P (1994) Childhood, adolescent and adult features of violent males. In L. R. Huesmann (ED., *Aggressive behavior; Current perspectives* (pp 215-240) New York; Plenum.
- Fischer, Donald B, 1984. Family size and Delinquency. *Perceptual and Motor Skills* 58;527-534
- Igwe, W.C 7 Ojinnika, N. C (2010). *Mental Health of Adolescents who abuse psychoactive Substances in Enugu. A cross sectional study. Italian Journal of Pediatrics .* 36;53.
- Ihezue, U. (1988b). Drug Abuse Among Medical Students at a Nigerian University: Part 1. Prevalence and Pattern of Use. *Journal of the National Medical Association, 80*(1), 81.
- Indiana Preventive Resource Centre (IPRC) Gateway drugs www.drugs.indiana.edu/publications/prc/factline/gateway.html/20th July, 2003.
- Maccoby, E. E. and Martins, J.A (1983). *Socialization in the context of the family: Parent-child interaction. Social, personality, and social development*,4,1.
- Mason, W. A., & Windle, M. (2001). Family, religious, school and peer influences on adolescent alcohol use: A longitudinal study. *Journal of studies on alcohol.*

- Makanjoula, A. B. Daramola, T. O. and Obembe, A.O (2007). *Psychoactive substance use among medical students in Nigerian University*. World Psychiatry, 6 (2), 112.
- Morakinyo, J., & Odejide, A. (2003). A community based study of patterns of psychoactive substance use among street children in a local government area of Nigeria. *Drug and alcohol dependence*, 71(2), 109-116.
- National Drugs Law Enforcement Agency (NDLEA). 2010, drugs report, Abuja, Nigeria.
National Drug Law Enforcement Agency (2011). NDLEA arrests 6,788 suspects, seizes 178,120.725kg of drugs in 2010. Retrieve from <http://www.ndlea.gov.ng/v1/?q=content/ndlea-arrests-6788-suspects-seizes-178120725kg-drugs-2010>
- Obot, I. S., (1993). Drinking behaviour and attitudes in Nigeria; *A general population survey*. CDS Monograph University of Jos, Nigeria.
- Odejide, O. A., Ohaeri, J., Adelekan, M. L., & Ikuesan, B. (1987). Drinking behaviour and social change among youths in Nigeria--A study of two cities. *Drug and alcohol dependence*, 20(3), 227-233.
- Ohaeri, J. U and Odejide, A. O (1993). Admissions for drug and alcohol related problems in Nigeria. Psychiatric care in one year. *Drug and Alcohol Dependence*, 31; 101-109
- Ogunremi, O. O and Rotimi D. O (1989). The Nigerian teenager and the use of drugs. *African Journal of psychiatry*, (2); 21-29.
- Oshikoya, K., & Alli, A. (2006). Perception of Drug Abuse Amongst Nigerian Undergraduates. *World Journal of Medical Sciences*, 1(2), 133-139
- Papalia, D. Olds. SW, and Feldman, RD (2004). *Human Development, 9 Newyork; McGraw Hill*.
- Price, C.,& Kunz, J. (2003). *Rethinking the paradigm of Juvenile Delinquency as related to divorce*. Journal of Divorce and Re marriage,3, 109-133.
- SAMHSA (2009). Results from 2008 *National Survey on drug use and health*; National findings. Unpublished manuscript, Rockville, M. D
- Smith C A., & Stern, S. B, (1997) Delinquency and Anti social behavior. A review of Family process and Intervention Research, social service review, 71, 382-420
- .Steinberg, L. (2001). We know some things: Parent–adolescent relationships in retrospect and prospect. *Journal of Research on Adolescence*, 11(1), 1-19.
- .Substance use and mental health service administration (2003). Overview of findings from the 2002 National survey on drug use and mental health- Rockeville, M.D, AUTHOR.
- Tomasevski, K "Health" in Schechter and Joyner,(2000). UN Legal Order, pp.559-906. International Response to Drug Abuse Among Young People. *Assessing the integration of human right obligation*.

Tribuneonline.com/node/22165.

United Nations International Drug Control Programme. Report of the *situation assessment of drug abuse in Nigeria*; NDLEA//UNDCP, Nigeria, 1999.

United Nations International Drug Control Programme; United Nations Office of Drugs and Crime; *World Drug Report*, (2011) New York, 2011.

United Nations Office on Drugs Control and Crime (2012). *World Drug Report*, Vienna, UNODC. Control Program; *Reports of the rapid situation assessment*

Vega, W. A., Zimmerman, R. S., Warheit, G. J., Apospori, E., & Gil, A. G. (1993). Risk factors for early adolescent drug use in four ethnic and racial groups. *American Journal of Public Health*, 83(1), 20-30.

Wang, G.T, Bahr S.J & Marcos, A.C (1995). Family bonds and adolescents substance use. An ethnic group comparison. In C. K, Jacobson (Ed) *American Families; Issues in race and ethnicity* (pp.463-492). New York; Garland publication.

Weekly Trust.com.ng/index.php?option=com_content & view=article=8666;drugs-revaging-lives-of-nigeria-youth-lizard-sewage.

Weekly Trust Newspaper (2012). *Drugs Revaging the Nigerian Youth*. 3rd March, 2012.

World Health Organisation (WHO,1993). *The health of young people*. WHO, Geneva.

World Health Organisation (2000). *Guide to drug abuse epidemiology* (an informal publication) WHO/MSD/MSB/00.3, pp;1-35.

**INFLUENCE OF MOTIVATION ON BIOLOGY ACADEMIC ACHIEVEMENT
AMONG SECONDARY SCHOOL STUDENTS IN GWARZO EDUCATIONAL
ZONE OF KANO STATE, NIGERIA****Isyaku Ado Kayyu¹, Ali Idris (PhD)² and Ahmed Tijjani Dikko³**^{1,2,3}Department of Science and Technology Education, Bayero University Kano-Nigeria¹isyakuadokayyu04@gmail.com, ²aidris.ste@buk.edu.ng, ³tjeeradda@gmail.com

Abstract

This study investigated the influence of motivation on Biology academic achievement among secondary school students in Gwarzo Educational Zone of Kano state, Nigeria. The study has three research objectives, two research questions and three null hypotheses. The researchers used One-short case study research design. The population of the study comprised of four thousand one hundred and twenty eight (4128) biology secondary school students in form three (SS 3). A sample size of three hundred and forty six (346) biology secondary school students was used for the study. Proportionate random sampling technique was used. The two instruments used to gather data for this study were: Biology Students' Motivation Questionnaire (BSMQ) and Biology Achievement Test (BAT). The instruments were validated by experts. Pearson Product Moment Correlation Coefficient was used to compute reliability of BAT which yielded a coefficient of 0.89 while Spearman Correlation Coefficient was used to compute reliability of BSMQ which resulted a coefficient of 0.80. The data collected were analysed using descriptive and inferential statistics. From the results of the analysis, it was discovered that there is a weak positive relationship (P - Value 0.66) between motivation and academic achievement among biology secondary school students in Gwarzo Zonal Education Directorate of Kano State, Nigeria. Based on this finding, it was recommended that parents and biology teachers should examine systematically other ways to change the behaviour of students towards biology. Hence, students should be motivated through reinforcement, praises, provision of learning resources so as to have high positive relationship between motivation and academic achievement among biology students.

Keywords: Motivation, Academic Achievement, Biology.

Introduction

The place of science in the development and fulfillment of the needs of any country is not in doubt. Therefore, Science is concerned about general explanation of reality. Muhammad and Lawal, (2015) defined it as an intellectual activity through which man study the natural things around us. Hence, science could be conceived as an organized body of knowledge in form of concepts, theories and laws. Science and technology are essential for a sustainable, innovation and invention that have improved the quality of lives. The application of educational principles, methods, theories and concepts in science is called science education (Aina, 2013).

Science education is the field aimed at sharing scientific contents and processes with individuals not traditionally considered part of the scientific community (Ojoma, 2014). These individuals could be students, farmers, market women or a whole community. Science education in Nigeria concentrates on the teaching of scientific concepts, methods of teaching and addressing wrong ideas held by learners with regards to science concepts (Jacob, 2013). The importance of science education to individual and the society at large is acknowledged

worldwide and it composed of the following fields: Physics, Chemistry, Mathematics and Biology.

Biology which is the subject of interest is coined from two Greek words: "bios" which means "life" and "logos" meaning "study", which according to Sorajoni and Ramalingan (2010), is the scientific study of life and structure of plants and animals. Taylor, Green and Stout (2005), defined it as a branch of Science that deals with the study of living organisms in relation to their physical environments. Therefore, it is a vast branch of Science that composed of diversified branches such as botany, zoology, entomology, genetic, cytology, anatomy, biochemistry, physiology, histology, and microbiology. Biology education is characterized by the study of structure, function, heredity, and evolution of all living organisms. It also deals with the study of living organisms, through different fields including morphology, physiology, anatomy, behaviour, origin, and distribution. The teaching of biology is very importance because it enables one to understand himself and his environment (Ali, Toriman & Gasim 2015). Ali, Toriman and Gasim added that the knowledge acquired in biology is applied in many fields such as Medicine, Biochemistry, Agriculture, Microbiology and Pharmacy among others. It also enables individuals to solve personal, interpersonal and social issues through scientific process skills and methods (Salome 2017). Yet, in spite of the perceived importance of biology, but the learning of biology at secondary schools might be affected by students' motivation towards the subject. Motivation is among the factor that influences students' academic achievement (Hussaini 2006). Similarly, Johnson, (2014) opined that there is a direct connection between motivation and academic achievement in biology education.

The word "motivation" was derived from the Latin word "emovere" which means to stir up, agitate or move (Bayo, 2005). It is defined as the inner force that initiates a person's behaviour or action. Santrock, (2009) defined motivation as the arousal of tendency to act and produce one or more effects. Chauhan, (2006) as an educational psychologist has identified two main classifications of motivation (intrinsic and extrinsic). Intrinsic motivation arises from a desire to learn a topic because of its inherent interests, for self-fulfillment, enjoyment and to achieve a mastery of the subject while extrinsic motivation is seen as the external forces that moves or agitates an individual to perform and succeed for the sake of accomplishing a specific result or outcome. Extrinsic motivation also refers to a behaviour influenced by external factors, such as good grades and higher social status while intrinsic motivation on the other hand means behaviour impacted by a person's interest and curiosity and thereby not impacted by external factors (Woolfork, 2010). Therefore, Students who are very grade-oriented are extrinsically motivated, whereas those who seem to truly embrace their work and take a genuine interest in it are intrinsically motivated. That is why motivation has special concern to educational researchers because of the crucial role it plays in teaching and learning processes. It has been observed that among all variables that have attracted researchers in science education, motivation is gaining popularity and leaving other variables behind (Cavas, 2011). Hence, it is important to understand the contribution of both intrinsic and extrinsic motivation as they influence students' academic achievement. It has been observed that, students' motivation, socio-economic background of the parents and environment are among the other factors that affect academic achievement (Jimoh, 2010). Pawar, (2017) opined that motivation is among the significant factor that affects learning and success of an educational program. Similarly, Johnson, (2014) opined that there is a direct connection between motivation and academic achievement in biology education. In this regards, although there are studies showing that there is a positive relationship between intrinsic motivation and academic achievement (Bolot, 2007 and Cavas, 2011) there are

studies suggesting that intrinsic and extrinsic motivation should be merged together in order to motivate an individual to get in to action for a goal (Hayenga and Corpus, 2010). It is important, therefore, to look at the relationship between these two variables and their effects on students' academic achievement. Motivation is a multidimensional construct that interacts with cognition to influence learning (Taasobshiraz and Sinatra, 2011).

The term academic achievement refers to the assessment of the extent to which students have learned, the degree to which an individual has acquired certain piece of knowledge or skills usually due to a planned or organized instructions (Usman, 2000). It has also been viewed as the measurable behaviour in a standardized series of tests (Mutua, 2015). Therefore, the purpose of testing academic achievement is to help the teacher and the students to evaluate and determine the degree of success attained in teaching and learning processes or otherwise. Adesoji (2008) opined that, active participation of students in teaching and learning processes will increase students' academic achievement. It has been observed that, students' motivation, socioeconomic background of parents and environment are among the other factors that affect students' academic achievement (Jimoh, 2010). Pawar, (2017) stated that, motivation and attitudes are among the significant factors that affect learning and success of an educational program. Therefore, based on the aforementioned, it might be seen that the issue of motivation, gender and academic achievement of biology secondary school students has not yet overcome. Therefore, Ukozor (2011) revealed that male students perform better in Biology at secondary schools. On the other hand Olom (2010) and Anioda and Egbo, (2013) reported significance difference in academic achievement of biology secondary school students in favour of females. Hence, there is need for further research to be conducted in different locations. This triggered the researchers to investigate the Influence of Motivation on Biology Academic Achievement among Secondary School Students of Gwarzo Zonal Education Directorate of Kano State.

Statement of the Problem

Biology is one of the basic and core science subjects which is design to prepare students with knowledge and skills of relevant scientific concepts and processes (FRN 2013). Over the years, the academic achievement of students in biology examinations in Nigerian Secondary Schools has been unsatisfactory despite the assumed easy nature of the subject (Ezechi & Chinyere 2018). According to Ezechi and Chinyere, this unsatisfactory academic achievement had been related to the different factors such as inadequate laboratory equipment, methods of teaching, negative students' attitudes towards learning and level of motivation among others. Unfortunately, many studies revealed that students' motivation towards biology declined throughout their years at secondary schools (Galton, 2009 and Osborne, Simon & Collins, 2003). This posed serious challenge to the educational stakeholders (Jimoh, 2010). The researchers observed that students' academic achievement in West African Examination Council (WAEC) in the study area has shown that the level of students' academic achievement in biology over the years (2013 to 2017) was not encouraging. The researchers also observed that in the study area, the students who passed biology subject at credit level are low (10%). However, because of the nature of Biology as the most important science subject in medical sciences one would expect many of the students to have distinction and credit passes in the subject. This weak academic achievement called for concern by biology teachers, parents, school administrators, researchers and other educational stakeholders. This low academic achievement is likely to be caused by some factors like low cognition ability, medical problems, gender, prematurity, teachers' variables and government factors more especially the level of students' motivation towards their study. Hence, this study sought to investigate the influence of motivation on biology academic

achievement among secondary school students in Gwarzo zonal Education Directorate of Kano State, Nigeria.

Objectives of the Study

1. To determine the relationship between motivation and academic achievement among Biology secondary school students in Gwarzo Zonal Education Directorate of Kano State.
2. To find out the difference in motivation towards Biology between male and female Biology secondary Students in Gwarzo Zonal Education Directorate of Kano State.
3. To examine the difference in the mean academic achievement scores of male and female Biology secondary school students in Gwarzo Zonal Education Directorate of Kano State.

Research Questions

1. Do male and female secondary school students of Gwarzo Zonal Education Directorate differ in motivation towards biology?
2. What is the difference in the mean academic achievement scores of male and female Biology secondary school students in Gwarzo Education Zone, Kano State?

Research Hypotheses

- HO1: There is no significant relationship between motivation and academic achievement of Biology secondary school students in Gwarzo Zonal Education Directorate, Kano State.
- HO2: There is no significant difference in motivation to Biology between male and female secondary school students in Gwarzo Zonal Education Directorate, Kano State.
- HO3: There is no significant gender difference in the mean Academic Achievement scores of Biology secondary school students in Gwarzo Education Zone, Kano State.

Methodology

The study employed One-short case study research design. The population of the study covered four thousand one hundred and twenty eight (4128) Biology secondary school students of class 3 (SS 3) in Gwarzo Zonal Education Directorate. Proportionate random sampling technique was used. A sample size of three hundred and forty six (346) biology students from six (6) selected secondary schools was used for the study. The sample size was drawn in accordance with Research Advisory Table of Sample Size (2006) as shown in Table 1.

TABLE 1:
Samples of the Study

S/N	School Code	Males	Females	Sample
1	A	523	-	103
2	D	214	-	42
3	M	220	-	44
4	V	182	-	36
5	R	-	283	91
6	J	-	94	30
	Total	1139	377	346

The two instruments used to gather data for this study were: Biology Students' Motivation Questionnaire (BSMQ) adapted from Moses (2017) and Biology Achievement Test (BAT) adopted from Past Question Papers of National Examination Council (NECO) from 2016 to 2019. The BSMQ had two sections which are Section "A" and "B". Section A of the Questionnaire was about the personal information of the respondents while Section B of the Questionnaire elicited data for the research question 1 with 20 items. The four 4-point Rating scale responses were used to elicit information from the respondents. The responses are; Strong Agree (AG); Agree (A); Disagree (D) and Strong Disagree (SD) which were weighed 4,3,2,1 respectively. The BAT items of the instrument were adopted from the Biology Senior Secondary Certificate Examination (SSCE) Past Question Papers of National Examination Council (NECO) from 2016 to 2019. The BAT is made up of forty (40) multiple-choice items with options ranged from A to E from which the students are expected to choose the correct response. In constructing the instrument, Table of specification was used.

The instruments were validated by experts in the Department of Science and Technology Education, Bayero University, Kano and one experienced Biology teacher who had more than 10 years of teaching experiences in secondary school. The corrections, suggestions and recommendations of the experts were incorporated in the final draft of the instruments. The test retest method was adopted for the pilot study of BAT. The BAT was administered to 20 respondents who were not part of the sample but included in population. Two weeks interval between first and second test was used. The data collected from BAT were treated using Pearson Product Moment Correlation and a coefficient of 0.89 was obtained and considered useful for the study. On the other hand BSMQ was also pilot tested using split half. The BSMQ was administered to 20 respondents who were not part of the sample but included in the population. The data collected were treated with Spearman Correlation Coefficient and a coefficient of 0.80 was obtained and considered useful for the study. The prepared instruments (BAT and BSMQ) were distributed through direct contact on the respondents with the help of research assistant (biology teacher). The data were analysed using descriptive and inferential statistics. The research questions 1 and 2 were answered using descriptive statistics while the hypotheses were tested using inferential statistics at 0.05 significance level.

Results

The data collected through the administration of the copies of the instruments to the respondents were analysed using descriptive and inferential statistics. The results obtained were used to answer research questions and test the null hypotheses as presented in Tables 2,3,4,5 and 6.

Research question One Do male and female secondary school students of Gwarzo Zonal Education Directorate differ in motivation towards biology?

Table 2: Analysis of Biology students' motivation Mean Rank scores between male and female students in Gwarzo Zonal Education Directorate.

Gender	Number	Mean Rank	Mean Rank Difference
Males	225	155.76	50.73
Females	121	206.49	

Table 2 showed that the Mean Rank of males is 155.76 while that of females is 206.49 having a difference of 50.73. This shows that there is difference in motivation towards Biology between male and female secondary school students in Gwarzo Zonal Education Directorate with the females having higher motivation level (206.49) than their males' counterparts (155.76)

Research question Two: What is the difference in the mean academic achievement scores of male and female Biology secondary school students in Gwarzo Education Zone, Kano State?

Table 3: Mean and Standard deviation of male and female secondary school students in Gwarzo Educational Zone

Gender	Number	Mean	Standard Deviation	Standard Error	Mean Difference
Males	225	20.91	4.51	0.30	
Females	121	20.55	3.32	0.30	0.36

Table 3 revealed the results of Biology secondary school students' academic achievement mean scores of males and females in Gwarzo Educational Zone. From the results tabulated male students have the mean score of 20.91 with standard deviation of 4.51 while female students have the mean score of 20.55 with standard deviation of 3.32 respectively. Mean difference of 0.36 was realized between male and female secondary school students in Gwarzo Education Zone in favour of male students. This implies that there is slight difference in academic achievement mean scores of male and female students. In terms of standard deviation the academic achievement mean scores of male and female students has a difference of 1.19 in favour of male students.

Hypothesis One: There is no significance relationship between motivation and academic achievement of Biology secondary school students in Gwarzo Zonal Education Directorate

Table 4: Result of Pearson product moment correlation coefficient on Biology Secondary School Students' Motivation and academic achievement in Gwarzo Zonal Education Directorate.

Variables	Number	r - Value	P - Value
Motivation	346	0.24	0.66
Academic Achievement	346		

Table 4 showed that the P - Value (0.66) is greater than the significance level of 0.05. Therefore, the null hypothesis which states that there is no significance relationship between motivation and academic achievement of Biology secondary school students in Gwarzo Zonal Education Directorate is accepted' This implies that there is no significance positive relationship (P - Value 0.66) between motivation and academic achievement of Biology secondary school students in Gwarzo Zonal Education Directorate.

Hypothesis Two: There is no significance difference in motivation to Biology between male and female secondary school students in Gwarzo Zonal Education directorate.

Table 5: Independent sample U - test Results of male and female students' motivation to Biology mean scores in Gwarzo Educational Zone

Gender	Number	Mean Rank	U - Test	P - Value
Males	225	155.76	9620.500	001
Females	121	206.49		

Table 5 showed that the computed U - value is 9620.500 and the observed P - value is 0.01 which is less than the alpha value using 0.05 significance level. Therefore, the null hypothesis two which states that there is no significance difference in motivation to Biology between male and female secondary school students in Gwarzo Zonal Education Directorate is rejected. This implies that there is significance difference in motivation to Biology between male and female secondary school students in Gwarzo Zonal Education Directorate in favour of females.

Hypothesis Three: There is no significance difference in the academic achievement mean scores of male and female Biology secondary school students in Gwarzo Zonal Education Directorate.

Table 6: Analysis of Independent sample Z - test of the academic achievement mean scores of male and female Biology secondary school students in Gwarzo Zonal Education Directorate.

Gender	Number	Mean	Standard Deviation	DF	Z Value	P - Value
Males	225	20.91	4.51	344	0.767	0.06
Females	121	20.55	3.31			

The results in Table 6 indicated that the Z- test computed is 0.767 and the P - value of 0.06 is obtained. This implies that the P-value of 0.06 obtained is slightly greater than the alpha value of 0.05. Therefore, the null hypothesis three which states that there is no significance difference in the academic achievement means scores of male and female Biology secondary school students in Gwarzo Zonal Education Directorate is hereby accepted.

Discussion of the Results

The research examined the influence of motivation on academic achievement among Biology secondary school students in Gwarzo Zonal Education Directorate of Kano State.

The First result of study revealed that there is a weak positive relationship between motivation and academic achievement of Biology secondary school students in Gwarzo Zonal Education Directorate. This finding is similar with the findings of Obiera (2018), Oluoh, Aloba and Odonga, (2018) and that of Adam, Josephine and Solomon (2014) who conducted a research on academic achievement among High school students which revealed that there is a weak positive relationship between motivation and academic achievement. This finding disagrees with findings of Arbabisarjou, Zare, Shahrakipour and Ghoreishinia (2016); Liu and Hour (2017) and that of Izuchi and Onyekuru (2017) which revealed that there is a positive relationship between motivation and academic achievement.

The Second finding of this study indicated that there is significance difference in motivation to Biology between male and female secondary school students in Gwarzo Educational Zone of Kano State in favour of female students. This finding contradicted the findings of Shihusa and Keraro (2009) which showed that there is no significance difference in motivation to Biology between male and female secondary School students. The studies of Kaya (2019); Cavas (2011); and Zamrud (2008) corroborated with the findings of this study which found that there is significant difference in motivation to Biology between male and female secondary school students in favour of female students. This indicated that female students possessed high level of motivation when compared with male students in Biology at secondary school.

The third finding of this study revealed that there is no significance difference in the academic achievement means scores of male and female Biology secondary school students in Gwarzo Zonal Education Directorate. This finding also implies that the male students have slightly outperformed the female students in the mean scores. The findings of Okorei and Ezeh (2016) and that of Okoyefi (2014) corroborated with the present study as they reported that there is no significance difference in the academic achievement of male and female Biology secondary school students while other researches disagree with the present finding as they reported significance gender difference in academic performance of male and female

students in favour of males (Abubakar & Kamar, 2018; Omwirhiren, 2015 and Okwara, Anyagh & Ikyaan, 2017).

Conclusion

The following conclusions were drawn based on the findings of the research study.

1. There is a weak positive relationship between motivation and academic achievement of Biology secondary school students in Gwarzo Zonal Education Directorate of Kano State
2. Female students possessed higher motivation to biology than their male counterparts in Gwarzo Zonal Education Directorate.
3. Male students have slightly higher academic achievement Mean score than males students in Gwarzo zonal Education Directorate. esence of difference in motivation to biology between male and female Biology secondary school students in Gwarzo Zonal Education Directorate.

Recommendations

Based on the findings and conclusions drawn, the following recommendations were made.

1. The parents and biology teachers should examine systematically other ways to change the behaviour of students towards biology in order to replace the weak positive relationship between motivation and academic achievement with high positive relationship. Hence, students should be motivated through reinforcement, praises and provision of learning resources so as to have high positive relationship between motivation and academic achievement among biology students.
2. State Ministry of Education and Non-governmental Organizations (NGO's) such as STAN should organize workshops, seminars and conferences periodically to biology teachers for the purpose of addressing them with new innovations that could develop and enhance students' high level of motivation towards Biology irrespective of gender inclination.
3. Biology teachers, parents and State ministry of education should engage in programs that would equalize and enhance students' academic achievement in Biology irrespective gender disparity

REFERENCES

- Abubakar, A. and Kamar, Y. M. (2018). Effects of computer-assisted instruction and inquiry institutional methods on secondary school students' performance in biology in Kebbi State, Nigeria. *Direct Research Journal of Social Science and Educational Studies* 5 (1) 1-4.
- Adesoji, F. A. (2009). Expensive teaching behaviour, bridging the gender gap in secondary concept Chemistry achievement. *Journal of Research in Science Teaching*. 28 (4) 325-362.
- Adom, E. A., Josephine, B. and Solomon, F. K. (2014). Achievement motivation, Academic self- and academic Achievement among High school students. *European Journal of Research and Reflection in Educational Sciences*. 2 (2) 24-37.
- Aina, J. K. (2013). Effective teaching and learning in science education through information and technology (ICT). *Journal of Research and Method in Education*. 2 (5) 43-47.
- Ali, A. R., Toriman, M. E. and Gasim, M.B. (2014). Academic Achievement in biology with suggested solutions in selected secondary Schools in Kano State, Nigeria. *International Journal of Education and Research*. 2 (11) 216-224
- Anioda, H.C.O., and Egbo, J.J., (2013). Effect of Gender on students' Achievement in Chemistry Using Inquiry Role Instructional Model. *Journal of Educational and social Research*, 3(3): 17-17
- Arbabisarjou, A. Zare, S., Shahrakipour, M. and Ghoreishinia, G. (2016). The relationship between achievement motivation and academic performance among medical students. *International Journal of Pharmacy and Technology*. 8 (2): 12272 - 12280.
- Bayo, U. Z. (2015) Achievement in motivation, gender and Academic performance of senior secondary School students in Gambe Metropolis. (Unpublished Masters' Dissertation). Bayero University Kano, Nigeria.
- Bolat, N. (2007). Motivation and success levels of 6th and 7th grade students in Science and Technology course at primary education with respect to learning styles. Eskisehir: A Master Thesis, Osmangazi University.
- Cavas P. (2011). Factors affecting the motivation of Turkish primary students for science learning. *Science Education International*. 22 (1):31-42.
- Chauhan, S. S. (2006). Advance Education Psychology. 6th Edn. Jangapura, New Delhi: Vikas Publishing House PVT. Ltd.
- Ezechi, N. G. and Chinyare, A. B (2018). Gender differences in basic science achievement of private Junior secondary Schools in Ohio/Akor Local Government Area, Rivers State. *International Journal of Scientific Research in Education*. 12 (2) 320- 329.

- Fareo, D. O. (2019). Study attitude and academic achievement in Biology at secondary school level in Mubi Metropolis of Adamawa State. *International Journal of Scientific and Research publications*, 9 (8) 333 -339.
- Federal Republic of Nigeria ([FRN], 2013). Revised National Policy on Education. Lagos Press.
- Galton, M. (2009). Moving to secondary school: Initial encounters and their effects. Retrieved from Perspectives on Education, 2 (Primary-secondary Transfer in Science), 5-12: www.wellcome.ac.uk/perspectives.
- Hacieminoghu, E. (2016) Elementary school students attitude towards science and related variables. *International Journal of Environmental & science Education*, 11 (2): 35 – 52
- Hayenga, A. O., & Corpus, J. H. (2010). Profiles of intrinsic and extrinsic motivations: A person-centered approach to motivation and achievement in middle school. *Motivation and Emotion*, 34(4), 371–383
- Hussain, A. (2006). Effect of guidance service on study attitudes, study habits and academic achievement of secondary school students. *Bulletin of Education & Review* 28 (1): 35- 52.
- Izuchi, M. R. N., Bruno, U., and Onyekuru, B.U. (2017). Relationships among academic self-concept, academic motivation and academic achievement among college students. *European Journal of Research and Reflection in Educational sciences*. 5 (2): 93 – 102.
- Jacob, A. K. (2013). Importance of science education to National Development and problems militating against its Development. *American Journal of Educational Research*. 1 (7) 225-229.
- Jimoh, A. T. (2010). Perception of difficult topics in Chemistry curriculum by students in Nigeria secondary schools. *Ilorin Journal of Education*. 4(1), 1-5.
- Johnson ML. (2014). Achievement motivation for introductory biology. *Journal of Studies in Education*. 4(1):1-6.
- Kaya, A. H. S., (2019). The relationship between academic motivation and academic achievement of the students. *Asian Journal of Education and Training*. 5 (2):309 - 315.
- Liu, Y. and Hou, S. (2017). Potential reciprocal relationship between motivation and achievement: A longitudinal study. *Social psychology International*, [doi.org./10.1177/014303437710574](https://doi.org/10.1177/014303437710574).
- Morgan, T. (2006). Research Advisors. All Right Reserve (<http://research-advisors.com>).

- Muhammad, H. H and Lawan, A. M. (2015). Factors militating against female participation in science and technology-based courses among female secondary school students in Kano Municipal zone, Nigeria. *Journal of the Department of Education, Faculty of Education, Bayero University Kano*. 4 (2) 291-302.
- Mutua, M. N. (2015). A correction study between learning styles and academic achievement among secondary School students in Kenya. M. Ed. Thesis. University of Nairobi, Kenya.
- Obiera, J. (2018). The relationship between achievement motivation and Mathematics performance among female learners in Kenya. *Global Journal of Social Sciences Studies*. 4 (1) 23-29.
- Okenyi, C.I. (2015). The problems and prospects of biology education development in Nigeria Beyond 2020. *Knowledge review*, 33(1): 1-6.
- Okorie, U. and Ezeh, D. N. (2016). Influence of gender and location on students' achievement chemical bonding. *Mediterranean Journal of Social Sciences*. 7 (3) 309-318.
- Okwara, O. L., Anyagh, P. I. and Ikyaan, G. S. (2017). Effect of projected instructional Media on senior secondary school students' achievement in Biology. *International Journal of Scientific Research in Education*, 10 (2): 137 -147.
- Olom, O. P. (2010). Effect of Improvised Materials on Junior Secondary School Two Students' Achievement and Retention in Mensuration. Unpublished doctoral dissertation, Benue State University, Makurdi.
- Oluoch, N. O., Aloka, P. J. O. and Odongo, C. O. (2018). Extrinsic motivation beliefs as predictor of students' Achievement in Chemistry in Public secondary schools in Kenya. *International Journal of Applied Psychology*. 8 (2) 23-29.
- Omwirhiren, E. M. (2015). Enhancing academic achievement and retention in senior secondary school Chemistry through discussion and lecture methods: a case study of some selected secondary schools in Gboko. Benue State, Nigeria. *Journal of Education and Practice*, 6 (21): 151 - 161.
- Osborne, J., Simon, S. & Collins, S. (2003). Attitudes towards science: A review of the literature and its implications. *International Journal of Science Education*, 25, 1049-1079.
- Salome, A.O. (2017). Effects of students awareness of bio entrepreneurship opportunities in biology education on combating economic recession in Nigeria. *International journal of education and evaluation*, 3(10): 22-29.
- Santrock, J. W. (2009). Educational Psychology. 4th Edn. New York: Mc Graw Hill.
- Shihusa H, and Keraro F. N. (2009). Using advance organizers to enhance students' motivation in learning biology. *Eurasia Journal of Mathematics, Science & Technology Education*. 5(4):413-420.

- Sorajani, T. R. and Ramalingam, (2010). Modern Biology for Senior Secondary Schools. Onitsha: AFP plc.
- Taasoobshirazi, G. & Sinatra, G. M. (2011). A structural equation model of conceptual change in physics. *Journal of Research in Science Teaching*, 48, 901-918.
- Taylor, D. J., Green, N. P. O. and Stout, G. W. (2005). *Biological Science*. Cambridge Low Price. Third Edition. United Kingdom. Cambridge University Press.
- Usman, I. A. (2000). The relationship between students' performance in practical activities and their academic achievement in Integrated Science using NISTEP mode of Teaching. An unpublished Ph. D. Thesis, ABU, Zaria.
- Woolfolk, A. (2005). Educational Psychology. 9th Edn. New York: Mc Graw Hill
- Ukozor, F. I. (2011). Effect of Constructivist Teaching Strategy on Senior Secondary School Students' Achievement and Self-Efficacy in Physics. *African Journal of Science, Technology and Mathematics Education*, 1(1): 141-160.

ROLE OF GUIDANCE AND COUNSELLING PERSONNEL IN THE MIDST OF NATIONAL CHALLENGES

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Abstract

This paper examines the role of guidance and counselling personnel in the midst of national challenges. The paper aimed at describing some of the roles and challenges faced in guidance and counselling towards in midst of national challenges. In the conceptual frame work some important concepts were discussed such as Guidance and Counselling, Role of Guidance and Counselling in Schools, Roles of Guidance and Counselling in effective Teaching and Learning, Challenges facing Guidance and Counselling in the midst of National Development and Others Challenges that are encountered by Teacher Counsellors in Executing Guidance and Counselling Duties. Conclusively guidance and counselling has significantly touched each and every human endeavour worldwide Nigeria inclusive and pushed both developed and developing nation to have effects on the national challenges. It has been suggested that there is need of frequent sensitization and awareness creation by the professionals on the role of guidance and counselling education in the midst of national challenges. There is need of co-opting professional counsellors in the task force committee on all problems that arises on guidance and counselling issues. Government should provide all necessary facilities required that will enables guidance and counselling education to perform their roles.

Keywords: *Guidance, Counselling, National, Challenges, Personnel*

Introduction

Guidance and counselling is an important educational tool in shaping the orientation in a child from negative ideas that is planted in the child by his/her peers (Achieng, 2018). The school need for the counsellor to assist the child in moulding their future through counselling therapy. The school counsellor is seen as a role model and highly respected by students. The counsellors by their training are expected to be care giver to the school child, listen to the child's concerns, short comings and proffer guidance to the child in a quest of moulding the child in the right part to take in their life pursuit (Nyamwaka, 2015).

Egbo (2013) stated that "the total development of a child can only take place in an environment conducive for teaching and learning". It is in realization of the above that all educational services which can promote teaching and learning in schools are given prominent attention by educational planners. Guidance and counselling services are among the school educational services. It is believed that guidance and counselling services in school shall develop, assess and improve educational programmes; enhance teaching and improve the competence of the teacher and reduce cost for the children as stated by Anagbogu & Nwokolo (2019).

The school children are undergoing some of the most difficult periods of life in which the transition from childhood to adolescence is a difficult one, unless they reach the adulthood. Apart from the influence of the family, peer-group, other major influence on the young children's life is the school and the school environment (Wambu, 2015). Counsellor can help each young person to cope with the changes that associate with adolescence, to develop a sense of responsibility, to make definite and considerable personal decisions. In short, families and schools have a role to play in assisting young people in their self-growth towards becoming a self-fulfilled and well adjusted adult. Guidance and counselling can provide a good basis for a broader education for life (Rutondoki, 2016). Counsellor can be regarded as a therapy to individuals with specific personal problems, or it can be the foundation of a more general "life skills training programme" for the student who is suffering from any particular problem, should be assisted in building up his/her personal resources in order to cope effectively with their future lives (Gysbers & Henderson, 2016)

Guidance and counseling according to Oraegbunam (2018) is a practice that had been in existence for a long period of time and had been passed on from one generation to another. The concept of guidance and counseling carry different but overlapping meaning. They are closely interrelated and cannot be overly separated from one another. Furthermore Mutie and Ndambuki (2002) observed that, the belief that human beings are basically self determining creatures. That means they had an innate desire for independence and autonomy as well as for self- destruction which implied that human beings had the ability, to control their own destiny and to be fully responsible for their action (Rutondoki, 2016). Main goal of guidance and counseling is to help people understand themselves in order to deal with life experiences in a healthy manner, by being able to recognize the factors that cause problems and look for appropriate methods of resolving or avoiding the situations that may lead to unhealthy lifestyles (Oraegbunam, 2018). Guidance and Counseling service are essential elements in overcoming the concerns of people in all societies.

Guidance and counselling is an integral part of Nigerian educational system. It constitutes the third force of education along with instruction and administration. According to Eyo, Joshua and Esuong (2010) guidance programmes for secondary school students are designed to address the physical, emotional, social, vocational and academic difficulties of adolescent students. This is to complement learning in the classroom and also enhance academic performance of students. Youths in Nigeria today are growing up in an increasingly complicated and fast-changing society (Oye, 2015). This is due to the technology and industrial development within the world which poses educational, vocational, personal-social challenges and which put the child in a state of anxiety, fear and stress of how to cope and adjust to the challenging situations (Owino & Odero, 2014). The recent complex changes and education trends in the world of work and society calls for proper implementation of guidance and counselling services in Nigeria, particularly in the school system. There are some contemporary social problems now prevalent in the Nigerian society. They include poverty, examination malpractice, juvenile delinquency, drug abuse, kidnapping, cultism, crime pruned films and movies among others (Owino & Odero, 2014).

The effect of these problems on the society has been highlighted to include high dependency rate, low per capita income, unwanted pregnancy, general disorder, moral decadence among others (Ondima, 2016). Unfortunately, Nigeria public schools generally, lack co-ordinated and effective system of guidance and counselling for the students. Guidance and counselling should not be viewed as a side attraction, something to be tolerated and allowed in the schools. It is indeed, the heart of the educational process (Gysbers & Henderson, 2016).

Conceptual framework

Guidance and Counselling

The terms 'Guidance' and 'Counselling' have been loosely or interchangeably used. Guidance is a term which is broader than counseling and it includes counseling as one of its services (Rutondoki, 2016). Guidance has been defined and understood differently by different people and literally, guidance means "to direct", "to point out", "to show the path" (Oye, 2015). Guidance is derived from the word to guide, which invariably means to "direct on a course, to give instruction and to manage (Okobiah, 2014). Guidance is the assistance given to a person who realizes that, he needs assistance in order to make him useful and worthwhile citizen of the society which he lives in (Okobiah, 2014). Moreover, UNESCO (2020) described guidance as encompassing the full range of personalized assistance given to the individual seeking to expand his understanding of himself and his understanding of others. Conceptually, guidance can be summarily defined as cognitive educational services (within or outside the school system) that help people understand themselves and their place in society, provided the client reveals accurate, reliable and valid information about himself and his environment (Oye, 2015).

Counselling

Counselling on the other hand is a process of helping individuals or group of people to gain self-understanding in order to be themselves. Counselling is a reflection of a professional relationship between a trained counselor and a client (Anyamene, 2017). Wango, (2017) defined it to be a process whereby a person is helped in a face-to-face relationship while Okobiah, (2014) explained counseling as an enlightened process whereby people help others by encouraging their growth.

Contextually, Counseling is a process designed to help clients understand and clarify personal views of their life space and to learn to reach their self-determined goals through meaningful, well-informed choices and a resolution of problems of an emotional or interpersonal nature (Okere, 2015). It believes that every human individual has the potential for self-growth, self-development and self-actualization.

Guidance

Guidance is helping pupil/student to become adjusted to his present situation and to plan his future in line with his interests, abilities and social needs (Akinade, 2015). Respect for the individual should be the basis of all guidance work (Rutondoki, 2016). Guidance services are meant for all pupils at all stages in which it differ with Counselling as a personal face to face relationship between two people, in which counsellor by means of relationships and his special competencies, provides a learning situation in which the counselee, a normal sort of person is helped to know himself, his present and possible future situations so that he can make use of his characteristics and potentialities in a way that is both satisfying to himself and beneficial to society and further, can learn how to solve further problems and meet future needs (Owino & Odero, 2014). While guidance is the overall framework personal services within the school, counselling (interviewing) is only one particular service. The counsellor is the key figure in the guidance program but he performs many other duties besides counselling as he discharges his guidance responsibilities (Ondima, 2016).

The two words guidance and counselling generally take on different meanings. The former refers to helping students' whole-person development, while the latter is frequently targeted at helping students with concerns (Rutondoki, 2016). In other words, guidance work is preventive and developmental in nature whereas counselling is more of supportive, remedial

work (Oye, 2015). The global trend seems to have moved from a casework and remedial approach to a preventive, developmental approach in providing guidance and counselling (Gysbers & Henderson, 2017). Guidance in schools is that area of the schools provision specifically directed towards helping pupils realize their full potential in preparing for adult and working life (Oye, 2015). Akinade (2015) defines guidance and counselling as a process of helping an individual become fully aware of his/her self and the ways in which he/she is responding to the influences of his/her environment. It further assists him/her to establish some personal meaning for their behaviour and to develop and classify a set of goals and values for future behaviour. According to Wango, (2017) stated that counselling can be defined as a number of procedures in assisting individuals to solve their problems. Counselling is more involved emotionally in the affective realm personalized learning, that is, emotions and feelings, values, attitudes. Counselling is an interaction or relationship between two or few individuals, the client counsellor relationship of trust (Rutondoki, 2016).

Counselling is a learning process in which a counsellor helps an individual or individuals learn, understand themselves and their environment and be in a position to choose the right type of behaviours that will help them develop, grow, progress, ascend, mature and step up, educationally, vocationally and socio personally (Egbo, 2013). In other words, counselling is a transformative process of helping people to learn all that are to be learnt both in and outside the School. Counselling is a person-to-person process in which one person is helped by another to develop, increase in understanding and ability to solve his or her problems (Rutondoki, 2016). Sometimes it could involve a group of two or more persons.

Roles of Guidance and Counselling in Schools

According to Kimathi, (2019) Stated some of the role of guidance and counselling which include the followings:

1. To bring about the maximum development of human potential for the benefit of the individual and society.
2. Assisting students to harmonize their abilities, interests and values, thereby enabling them to develop their potential fully.
3. Provides students with the necessary information in which such information will assist students develop realistic self-concept according to their academic capabilities.
4. Assist adolescence stage to help them understand their developmental stage and adjust to school life.
5. To help students choose and pursue achievable careers.
6. Inform students about various jobs and openings available, the qualification required plus the responsibilities involved and the nature of the work so that they can decide and have clear occupational goals.
7. Helps students who are experiencing difficulties.
8. Helps a client to attain a self-understanding which will facilitate change of behaviour, change of attitude and identification of special talents and abilities.

Role of Guidance and Counselling in Effective Teaching and Learning

The role of guidance and counselling as stated by Salihu, (2020) has given some opportunities:

1. It shaping the orientation in a child from negative ideas that is planted in the child by his/her peers.
2. The school counsellor is seen as a role model and highly respected by students.

3. It helps in the total development of a child that can only take place in an environment that is conducive for teaching and learning.
4. It shall develop, assess and improve educational programmes; enhance teaching and improve the competence of the teacher and reduce cost for the children.

Challenges Facing Guidance and Counselling in the Midst of National Development

Guidance and counsellors are struggling with many challenges in their efforts to meet the development needs of their client as stated by (Rani and Sripathi, 2020).

1. Management – The school management has been facing challenges in relation to developing appropriate actions and response initiatives in practicing guidance and counselling. The management is faced with certain challenges such as changing their modes of facilitating to their client in which are re-shipted to analogue way and resistance from client where matters are arising upon the challenges of sustaining their programs (Muftahu, 2020). Therefore, right leadership and management with clear and define responsibilities need to be put in place in order to confer on this challenge (Salihu, 2020).

2. Funding Uncertainties – Guidance and counselling Personnels are facing immediate financial concerns such as funding uncertainties. According to Ferguson, (2020) says the economic effect on the role of counsellors could have serious short and long term repercussions, such as decreasing number of clients and others affairs of the role of the counsellors. Improved funding is needed in all the activities of guidance and counselling. The most pressing problem of guidance and counselling services is that lack of proper funding of education and its services. Scholars and counsellors have underscored the importance of adequate funding in guidance and counselling services. The programmes need adequate funding as to enables them to put up infrastructures and purchase the required facilities (Tripathi, 2020).

3. Students Learning Remotely – In addition to the delivery of instructions through technology, schools are also facing challenges in the shift to online or remote learning. According to Low (2019) learning remotely can contribute to certain challenges for students such as issues with technology (i.e. poor or no internet connection), lack of knowledge on basic computer skills, overwhelming online assignments, coursework and refusal to accept remote learning design has suffered both the teacher and learners towards the national challenges facing guidance and counselling.

4. Technology Acceptance and Adoption – Professional counsellors and clients face with challenges that regards to technology acceptance and adoption because there are some client who find it too difficult to be accessed and have contact (Lim, Sam, and Wah, 2020). This means that some counsellors and client are not comfortable with the adoption of technology towards facilitating remote learning due to unfamiliarity thereby influencing technology acceptance behaviours in which they are not ready for drastic that changes (Flavell, Harris, Price, Logan and Peterson, 2019). Lack of knowledge on basic computer skills, overwhelming and refusal to accept remote learning design.

5. Cope with Change Difficulties

The credit rating organization, has downsized high standard of higher learning from "stable" to "negative," adjusting to financial and instructional improvements needed for the role guidance and counselling which was challenging for such counsellors to adjust (Moody's, 2019).

In the same direction, Education had great difficulties in preparing for any possible change that might occur to the educational system or any other urgent situations due to the absence of strategic planning and contingency plans of the counsellors which may increase their willingness to resist any possible change in the educational system (Talidad and Toquero, 2020).

6. Unsustainability of Education

Some of the concerns are unsustainability to our education, because there is highly challenging to the economic circumstances that threaten the sustainability of schools education in which most counsellors faced with difficulties to do their role or job. This means that some of the administrators are not to provide diverse learning pathways towards supporting sustainable education (Salihu, Nayel and Rabiatal-Adawiah, 2020). Therefore education tends to be unsustainable due to frequent change of leadership that was managing the affairs of education.

Others Challenges encountered by Teacher Counsellors in Executing Guidance and Counselling roles are:

1. Lack of Formal Training for Guidance and Counselling Teachers

Guidance and counselling in schools is conducted by teachers who do not have any formal training or knowledge obtained from the classroom but it is conducted based on the experience, age and wisdom (Patton & Burton, 2017). Today, training in guidance and counselling is important due to the pressure emanating from the changing nature of behavior management among the youngsters (Ogonya, 2017). Guidance and counselling services reveal the ineffectiveness of this program as the policy and decision makers are ill informed (Patton & Burton, 2017). Relevant skills in guidance and counselling are not optional in a school, but something that is mandatory. Practical skills and theories are necessary for an effective guidance and counselling programme as opined by Mapfumo & Nkoma (2017).

2. Teachers Counsellors' Workload

Teacher counsellors are to be allocated with adequate time in the school time table to attend to the student needs. Presently, teachers offer their academic duties besides those of counselling in majority of the secondary schools (Low, 2019). However, guiding and counselling is considered by majority of the teachers as subsidiary and hence dedicate more of their time on academic duties as compared to the counselling duties. The number of students enrolling in secondary school is higher than before. However, the number of teachers in return does not correspond to the increase in the number of students. The shortage of teachers means that the few available ones have to engross themselves first with the academic duty after which any other duties may later follow (Wango, 2017). Furthermore, the high enrolment means that teachers will not be in a position to conclusively address the needs of individual students as they are overwhelmed (Salihu, 2020).

3. Religious Beliefs and Attitudes

Religion has also been found as playing a key role in being a challenge on effective implementation of the guidance and counselling programme (Jacob, & Gupta, 2018). Whereas teacher counsellors are willing to assist the teachers on the various counselling issues that they face, religious beliefs are a drawback to them (Owino & Odero, 2014). For instance, the sensitive nature of abortion and drug use raises ethical issues from the various religious denominations. The religious differences and beliefs practically and effectively challenge the implementation of guidance and counselling programme (Jacob & Gupta, 2018)

4. Inadequate Resources

Adequate resources and equipment are essential in provision of effective guidance and counselling services (Okobiah and Okorodudu, 2014). Counselling and resource rooms with private cubicles are necessary for effective guiding and counselling services. However, with little funding among the public schools in Nigeria, some of these facilities and equipment could not be a priority to them. In many instances, priority will be given to the resources and facilities that will facilitate academic achievement. Guiding and counselling while being seen as a secondary programme will have been challenged. The high enrolment of students in

schools also means that the facilities are stretched and hence a clear indication that they are inadequate (Mushaandja, 2019).

Conclusion

Guidance is applicable to all aspects of human life i.e. physical, mental, vital, emotional and spiritual and in all stages of development from infancy to old age. The main objective is to help individual to utilize the basic potentialities to the maximum for adequate adjustment in the environment. The success of any challenged to be solved depends on educating and enlightened the individuals who they shoulder the responsibilities of running the administration of guidance and counseling's. Guidance is an integral part of education. Guidance and Counselling also help students in career choice to vying to their appropriate area that they are good at instead of following their peers in choosing a wrong career part. The education of a child needs constant mentoring hence guidance is inimical to their growth and development in a complex society that we are today.

Suggestions

1. There is need of frequent sensitization and awareness creation by the professionals on the role of guidance and counselling education in the midst national challenges.
2. There is need of co-opting professional counsellors in the task force committee on all problems that arises on guidance and counselling issues.
3. Government should provide all necessary facilities required that will enables guidance and counselling education to perform their roles.
4. There is need for serious enlightenment on the part of the public to accept guidance and counselling in coping with changes that may arise.
5. Government should support guidance and counselling practically by providing and making funds available for all the services in guidance and counselling.

REFERENCES

- Akinade, E. A. (2015). *Modern Behaviour modification, principles and practices*. Ibadan: Bright Way Publishers.
- Achieng, A. A. (2018) *Guidance and Counselling. An Introduction*. Nairobi: Exact Concepts Publishers.
- Anagbogu, M. A. & Nwokolo, C. N. (2019) *Guidance and Counselling in Primary Schools*. Lagos: Mark New World.
- Anyamene, A. N. (2017). Professional challenges to counselling practice in primary schools in Anambra State, Nigeria: The way forward. *International Journal of Psychology and Counselling*, 5(5), 97-103
- Eyo, M. B., Joshua, A.M. & Esuong, A, E. (2019). Attitude of secondary school students towards guidance and counselling services in Cross River State. *Edo Journal of Counselling* 3(1), 87-99
- Egbo, A. C. (2013). *The Role of Guidance and Counselling in Effective Teaching and Learning in Schools: The Nigerian Perspective*.
- Ferguson, H. T. (2020). Cuts expected for state higher education funding in the wake of guidance and counselling Cuts Expected for State Higher Education Funding in Nigeria.
- Lavell, Harris, Price, Logan, E. & Peterson, R. (2019). The Shift to Online Education in the Arab World Is Intensifying Inequality. <https://www.alfanarmedia.org/2020/04/the-shift-to-online-education-in-the-arab-world-isintensifying-inequality/>
- Gysbers, N.C. & Henderson, P. (2016). Comprehensive Guidance and Counselling Programmes: A Rich History and a Bright Future. *In Professional School Counselling*, 4 (4), p.246- 256.
- Jacob, V. C. & Gupta, P. V (2018). Influence of attitude, school facilities and teacher characteristics on the performance of secondary school teachers working in rural areas. *International Journal of African and Asian Studies*, 2, 72-81
- Kimathi, C.K. (2019). *Perception of the Teacher Counsellor's Role in the Implementation of secondary school curriculum: A case of Central Division, Machakos District*. Unpublished Master's Thesis, Kenyatta University.
- Low P. K. (2019). *Considering the Challenges of Counselling Practice in schools*. *Int. J. Advan. Counselling*. 31:71- 79.
- Lim, Sam & Wah, I. (2020). What are Malaysia's public universities doing? Online Classes and more related t guidance and counselling. What-are Malaysia's- public-universities- doing-online-classes-and-mo/184707

- Mapfumo, J. & Nkoma, E. (2017). The State of Guidance and Counselling Programmes in High Schools in Manicaland, Zimbabwe. *International Journal of Scientific Research in Education*, 6(2), 100-116.
- Mushaandja, J., E (2019). Major challenges facing teacher counsellors in schools in Namibia. *Educational Journal*, 2(3), 77-83
- Moody's. (2019). Moody's - Outlook for US higher education sector changed to stable from negative on steady revenue gains. https://www.moodys.com/research/Moodys-Outlook-for-US-higher-education-sector--changed-to-stable--PBM_1207036
- Muftahu, M. (2020). Higher Education and guidance and counselling: Matters arising and the Challenges of sustaining academic programs in developing African universities: *International Journal of Educational Research Review*, 5(4), 417-423.
- Nyamwaka, E.O, (2015). Assessment of implementation levels of guidance and counselling programme in Nigerian secondary schools: A case of Sotik district, Bomet county, Kenya. *Journal of Education and Practice* 4(3), 178-186
- Ondima, P. C. (2016). Assessment of challenges facing secondary school guidance and counselling teachers in Nyamira district, Kenya. *Journal of Education and Practice*, 3(16), 41-47.
- Ogonya, D.O. (2017). *Guidance and counselling services in public primary schools in Kisumu District*. Unpublished Master's thesis, Maseno University
- Okere, A. (2015). The effective school counsellors: Perception of students, teachers and counsellors. *Journal of Education. Foundations*, 1, 147-152.
- Okobiah, O. C, (2014). Concepts of guidance and counselling. In issues, concepts theories and Techniques of guidance and counselling. Benin City: *Ethiope Publishing Corp*. p.271-277.
- Oraegbunam, N. M. (2018). Guidance and Counseling: A missing link in the pre-primary and primary education in Anambra State. *International Journal of Educational Resources Development*, 3(1): 19-27.
- Owino, J & Odero, F. Y (2014). Constraints affecting attitude of teachers towards practicing guidance and counselling in primary schools in Kisumu west sub country *European Journal of Research and Reflection in Educational*, 2(3), 34-47.
- Oye, N. D (2015). Guidance and Counseling in Nigerian Secondary Schools: The Role of ICT. *I.J. Modern Education and Computer Science*, 8: pp. 26-33.
- Patton, W., & Burton, T., (2017). Training needs of career guidance personnel in Australia and Susanna WaiChing Lai-Yeung /Procedia - Social and Behavioral Sciences 113 (2014) 36 – 43.
- Rani. M., & Sripathi, N. (2020). Immense impact on equity in tertiary education of guidance and counselling. [immense-impact-equity tertiary- education](#).

- Rutondoki, N. E. (2016). *Definition of Guidance and Counselling*. Kampala: Makerere University Press.
- Salihu, J. (2020). Educational challenges and opportunities of guidance and counselling. Alex Publishers.
- Salihu, D., Nayel, M. C, & Rabiatal A. J. (2020). The challenge of using technology for medical education in low and middle income countries. *Med Ed Publish*, 9(1), 1–7.
- Talidong, K. J. B., & Toquero, C. M. D. (2020). Philippine Teachers' Practices to Deal with Anxiety amid Guidance and Conselling. *Journal of Loss and Trauma*.
- UNESCO (2020). *Guidance and Counselling Programme Development*. Botswana. AJEY Publishers.
- Wambu, G. W, (2015). School Guidance and Counselling in Kenya: Historical Development, Current Status, and Future Prospects. *Journal of Education and Practice*, 6, 24-32.
- Wango, G. (2017). *Counselling in the School: A Handbook for the Teacher* Nairobi: Phonex Publisher.

EFFECT OF TOKEN REINFORCEMENT ON MATHEMATICS PERFORMANCE OF GIFTED UNDER-ACHIEVERS IN FEDERAL GOVERNMENT ACADEMY FOR THE GIFTED, SULEJA

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Abstract

This study investigated the Effect of token reinforcement on mathematics performance of gifted underachievers in Federal Government Academy for the Gifted, Suleja. Four objectives, four research questions and four corresponding hypotheses were formulated. The researcher employed quasi experimental research and a pre-test, post-test research design using a population of one hundred and fifty six (156) junior secondary II students of Federal Government Academy for the Gifted, Suleja. Purposive sampling technique was used and twenty four (24) gifted underachievers were selected (12 for the control group and 12 for the experimental group). Four instruments were used for data collection. Token reinforcement was used as an intervention for the treatment group. There was no intervention for the control group. Descriptive and inferential statistics were used for the data analyses with SPSS software version 23. The findings revealed that there was a significant difference in the post-test mean score between gifted underachievers exposed to token reinforcement and those not exposed to token reinforcement. It was concluded that token reinforcement improved the mathematics performance of JSSII Gifted underachievers in Federal Government Academy for the Gifted, Suleja.

Key Words: *Gifted, Underachiever, Token reinforcement*

Introduction

The development of human capital is a strong and central tool for the nation's growth. A qualitative and functional education is an essential ingredient to build human capital in a nation. As developing nation move from the idea of exporting raw materials into manufacturing base, there is an ongoing debate about how to best prepare children and youth for adult success in the twenty-first century. In relation to this, education is considered as the development of the endowed capacities in the individual, which enables such person to control his/her environment and fulfill his/her possibilities to a large extent. Indeed, in this era of globalization and technological revolution, education is considered as the first step for every human activity. It plays vital role in the development of human capital and is linked to an individual's well-being and opportunities for better living (Baker, 2014).

Consensus is not often found in the literature on gifted underachievement. What does it mean to underachieve? This question stimulated much research and debate with very little, if any, consensus on any answers. There had, however, been consensus about one issue; the consistently pervasive nature of academic underachievement among gifted learners. Despite decades of interest and commitment to this topic, it was estimated that 15% to 40% of identified gifted students were at risk of performing far below their academic potential (Baker, 2014). This situation was regrettable given that students with gifted ability were the most precious natural resource a civilization had. It seemed pertinent and timely to ask why there had been so little progress in reducing gifted underachievement despite so many studies into the phenomenon. Was there an approach that could have provided a new understanding

of gifted underachievement in all its complexity? On this question, Rimm (2010) challenged gifted educators to revisit the current use of the label “underachievement.” Academic underachievement is generally conceptualized as a severe discrepancy between a student’s expected achievement and his or her actual achievement, which is not attributable to any diagnosed learning disabilities (Reis & McCoach, 2010). They believed that although this discrepancy formula offers a clean-cut and precise definition, the term itself underachievement is too broad to apply to every case where high ability is not matched with equally strong performance. Underachieving behavior is broader than mere interplay between expected achievement and actual achievement. He suggested that there are more “amorphous indicators” at the heart of underachieving which, once understood, show that there are two different types of underachievers: (a) *conventional* underachievers and (b) *selective consuming* underachievers.

It is estimated that nearly half of gifted youth achieve significantly below their potential" (Karaduman, 2013), and other researchers have found that more than 75% of African-American gifted students are underachievers (Diaz, 2010). Underachievement is typically defined as a discrepancy between the child's school performance and some index of his or her actual ability, such as intelligence, aptitude, or creativity test scores or observational data" (Diaz, 2010, Rimm, 2010). The underachieving student became disinterested in his education and found no reason to put forth effort and time needed to be highly successful, as he should have been. This student often did just enough to earn average grades although he was capable of achieving much more. The gifted underachiever did not use his natural abilities to excel, but rather settled for "getting by." He often did not move on to college, or dropped out if he wished. This study attempted to find reasons for this lack of motivation on the part of some gifted students, and to address the problems illuminated by those reasons.

Concept of Giftedness

There have always been individuals in our midst who inspire us with awe or envy based on their speed of learning, graceful performance or innovative ideas. The appearance of effortless with which these individuals make outstanding contributions in their fields of endeavor continues to intrigue. For nearly a century, scholars have sought to understand, measure and explain giftedness. Succeeding theories and empirical investigations had often built on earlier work, complementing or sometimes clashing over conceptions of talent or contesting the mechanism of a talent development. Some have even suggested that “giftedness” itself is a misnomer or the result of endless practice and/or social advantage (Bourgeois, 2013).

Historically, the primary and still most concentrated attention to giftedness was seen as a generic, innate quality of an individual that needed to be recognized and revealed through some type of cognitive assessment or IQ test (Hymer, 2009). Furthermore, gifted individuals were presumed to possess reasoning abilities that allow them to be successful across all academic domains and were presumed to remain gifted throughout their lives, whether or not they actually achieve (Hymer, 2009).

Contrary to this view, many contended that outstanding academic achievement required more than intellectual ability (Robinson and Clinkernbeard, 2008), yet the conception of giftedness as primarily general intelligence (g) which referred to the general mental-ability factor that was common to all tests of intelligence and ability remained strongly entrenched in the minds of the public and the education professions. This belief was reflected in policies and practices in individual states and districts across the United States (NC, 2005).

Nevertheless, definitions and explanations put forward by experts in the field of education, psychology and other related areas of knowledge made the concept better understood. In this line, Witty, (2002) cited by Abang (2005), defined the gifted as:

Those whose performance in any valuable line of human activity are consistently or repeatedly remarkable.

Some professionals defined “gifted” as an intelligence test score above 130 that is, two or more standard deviations above the norms or the top 2.5% of the population. Some others also defined it based on scholastic achievement where the child was described as working two or more grade levels above his or her age.

A former United States Commissioner of Education, Morelock (2002), in his report to the American Congress, stated as follows:

Gifted and talented children are those identified by professionally qualified persons who by virtue of outstanding abilities are capable of high-performance. These are children who require differentiated educational programmes and /or services beyond those normally provided by the regular school programme in order to realize their contributions to self and society.

Gifted Underachievers

Underachievement has been defined by various educational specialists (Guide, 2005; McCall *et al*, 2002; Reis and McCoach, 2010, and Branch, 2007), yet, not one is enough to define underachievement for gifted individuals, especially those whose giftedness is not evenly spread in the different domains. For the perspective of this paper, we propose the following composite operational definition of underachievement in gifted students:

“An underachieving gifted student is one who, having been classified as gifted in a domain, is at risk of failure in a subject, the achievement of which uses the domain of intelligence where the student has been identified as “gifted”. For example, one who has a superior IQ score in Quantitative Reasoning may be expected to perform very well in Mathematics, but not necessarily in History. So, if this student nearly fails History, unless he is also gifted in Verbal Reasoning and Memory, he or she is not underachieving with respect to this subject. If, on the other hand, he nearly fails Mathematics, then he would be underachieving in Math. Actual failure in a subject where no learning disability is recognized is considered underachievement.”

This definition may be faulted for using “at risk of failure” as the benchmark of poor performance, but being overly sensitive to achievement levels can run counter to the healthy emotional development of the child. Also, achievement is a result of the complex interaction of many factors, including the student’s own assessment of his or her priorities.

Needlessly pressuring the student to perform to his or her peak may impair the student’s ability for self-direction. Therefore, if authorities want to raise the benchmark, then the student has to be placed in a program where difficulty of the subject matter approximates gifted expectations.

Recent research on gifted education is judged by many leaders in the field to be "fragmented, contested, porous rather than unified, insular, and firmly policed" (Dai, Swanson, & Cheng,

2011). Further, Van Tassel-Baska (2006) argues that, other than acceleration and ability grouping, topics within the area of gifted education have not elicited key ideas to advance, nor have they inspired research that promotes effective policy development or practice.

Though underachievement has received more attention from investigators in recent years, understanding of this phenomenon continues to be hampered by lack of consensus on the most effective methods of measurement and the hurdle of finding large groups of students who have been identified as both gifted and underachieving (Academy, 2007).

In the report of their study of gifted students' attributions about academic success and failure, Ayodele (2012) did not include the roles of teaching style and effectiveness, curricula, grouping, and inclusion. These possible influences on the academic encouragement or discouragement of students are not among the choices given the 4, 901 high-ability participants in the non-open-ended items on the questionnaire they were asked to complete. Those students who had been identified as both gifted and underachievers gave only three main reasons for their relative failure academically: "did not work hard enough," "not doing work the right way," and "the task was hard". The questionnaire used in the study did not include possible answers that touched on motivational approaches by teachers, curricula designed to challenge and interest gifted students, or the grouping with peers of similar ability among the choices.

Several educational researchers have suggested that causes of underachievement can be separated into two major categories: environmental (school factors) and personal/family factors (Hoover-Schultz, 2005). Other investigators have argued that "Because school environment is the variable that is most readily modifiable by school personnel, its effects on the achievement or underachievement of gifted children seem particularly worth studying" (Matovu, 2012). In their study of a group of students attending a summer program resulting from a talent search, those students who had been identified as underachievers in their home schools became very successful academically when exposed to the challenging curriculum and peers with similar ability in the summer program. Matovu conclude that changes in the curricula offered to gifted students can result in these students becoming achievers and performing up to potential.

Statement of the Problem

A large number of gifted students do not reach the high levels of academic success of which they are capable (Ishaq, 2013, McLaughlin, 2014; Rimm, 2010), and few empirical researches exist attempting to find reasons for this their underachievement. It has been observed that some gifted performed fairly in mathematics which is a national requirement for admission into tertiary institutions of learning. Hence, the questions why some learners of high ability fail to perform to their potential? What can educators do to increase the percentage of this cohort to achieve successfully, benefitting themselves and the society at large? For a long time, the greatest lingering problem facing the education of gifted underachievers globally is how to improve their academic performance to achieve the best potential and ability. Traditional teaching delivery methods are not meeting the motivational needs of gifted underachievers. Thus, could token reinforcement as an identified strategy enhance their performance in mathematics particularly for gifted underachievers? It was against this background that the effect token economy strategy was sought to find whether or not token reinforcement could be used to remedy underachievement of gifted learners.

In view of paucity of researches in this area, there was the need to investigate the effect of token reinforcement technique on mathematics performance of gifted underachievers in particular, since it is a key subject in the national learners' package.

Objectives of the Study

Main objective of this research was to: Find out the effect of token reinforcement technique on mathematics performance of gifted underachievers in Federal Government academy for the Gifted, Suleja.

The following specific objectives were paramount to this study:

- 1) To ascertain the types of token reinforcement techniques used by teachers in teaching mathematics for gifted underachievers.
- 2) To find out whether token reinforcement technique improves the performance of gifted students underachievers in mathematics or not.

Research Questions

1. What type of token reinforcement technique the teacher use in teaching mathematics to gifted underachievers?
2. Do the types of token reinforcement techniques used by the teacher improve the performance of the gifted underachievers in mathematics?

Hypotheses

- 1 There is no significant effect between the pre-test and post-test mean scores of gifted underachievers motivated with token reinforcement.
- 2 There is no significant difference in the post-test mean score between gifted underachievers exposed to token reinforcement and those not exposed to token reinforcement.

Research Design

This study was an experimental research. It was a quasi-experimental in nature. Its design was two group pre-test, post-test, non-randomized experimental and control group designs.

The study adopted experimental research involving pre-test and post-test design to find out the effect of token reinforcement on the mathematics performance of gifted underachievers. In the study, two groups were non-randomized into experimental and control group. This is because the participants were of similar characteristics. The pre-test post-test design was used because the researcher wanted to find out the effect of token reinforcement technique on a group of pupils who had the same characteristics. A non-randomized technique was used in order to divide the students into experimental and control groups.

The control group took a pre-test but was not exposed to treatment and took a post-test. However, the experimental group took a pretest and was given treatment and after exposure to the treatment a post-test was also administered.

Population of the Study

The population for this study was made up of 156 junior II secondary school students whose age range were 13-15 years from Federal Government Academy for Gifted, Suleja. This selection was based on the fact that JSS one students were very new to the school while JSS three students were preparing for their JSC examination, as such, JSS two students were found to be more predisposed for the purpose of this study.

Table 1: Population of the study

No. of Male students	No. of Female students	Total
87	69	156

Sources: Principal Federal Government Academy for Gifted, Suleja (2019).

Table 2: Sample Size

JSS II Students Population	Boys	Girls	Total
156	14	10	24
156	13	11	24

Sampling Technique

The sampling technique employed for this study was non-probabilistic sampling technique. The researcher used homogeneous purposive sampling technique because the selection was based on certain characteristics of students identified in JSS II as gifted underachievers in mathematics at Federal Government Academy for the Gifted, Suleja. Purposive sampling technique is a process of selecting research sample based on the knowledge of the researcher about the population under study, (Kolo, 1994). It was on this basis that JSS II students were purposively selected for this study. Because the selection was based on a group of students that have particular traits that the researcher wants to study.

Instruments for Data Collection

The researcher employed additional procedures to re-ascertain their giftedness. The consensus among the literature is that identification of gifted students should be by multiple criteria (Freeman, 2016). This was also the view of Reis and Renzulli, (2010) who argued that one-dimensional methods and tests were not suitable, effective or successful for identifying students as gifted. Father more, According to Kolo (1994), the identification of gifted student should be by multiple methods. On that basis, the researcher used the following instruments:

- a. Checklist for Identifying Gifted Underachievers (CIGU)

Research Question 1: What type of token reinforcement technique the teacher use in teaching mathematics to gifted underachievers?

Table 3: Difference in the mean scores of the types of token reinforcement used on the experimental group

Variables	N	\bar{X}	SD
Edible token reinforcement	6	61.83	3.06
Tangible token reinforcement	6	69.83	3.76

Table 3 brought out the mean scores of those students taught and exposed with two types of token reinforcements. The result showed the mean score of those under edible group to be 61.83, while the mean score of those under tangible group was 69.83. This indicated that there was significant difference between gifted underachievers taught and exposed with edible token reinforcement and those taught and exposed with tangible token reinforcement in favour of those taught and exposed with the tangible token reinforcement.

Research Question Two: Do the types of token reinforcement techniques used by the teacher improve the performance of the gifted underachievers in mathematics?

Table 4: Difference in the mean scores of control and experimental group

Variables	N	\bar{X}	SD
Control group	12	47.50	3.06
Experimental group	12	65.08	5.63

Table 4 above pointed out the mean score of the control group to be 47.50 while the mean score for the experimental group was 65.08. It also indicated that the standard deviation for control and experimental groups as 3.06 and 5.63 respectively. The table curve out that there was a significant difference between gifted underachievers motivated with token reinforcement and those not motivated with token reinforcement in favour of those taught and exposed with the token reinforcement.

Ho₁: There is no significant difference between the pre-test and post-test mean scores of gifted underachievers motivated with token reinforcement.

Table 5: Paired sample t-test on the difference in the pre-test and post-test mathematics performance of gifted underachievers taught and exposed with token reinforcement

Variable	N	Df	\bar{X}	SD	t _{Cal} -Value	p-value
Pre-test	12	10	47.08	3.18	-9.814	.000
Post-test			65.08	5.63		

Table 5 above found out the paired sample t-test comparison of the mean scores of control and experimental groups in mathematics test. The mean score for the pre-test was found to be 47.08 while the mean score for the post-test was found to be 65.08. The table also gave the t-value, degrees of freedom, significance level (p-value). The t-test showed that the post-test had a mean score of 65.08 and a standard deviation of 5.63. This showed that there was a difference between the pre-test and post-test mean scores. Hence, the t-test was -9.814 in favour of the post test, while the p-value was .000. Therefore, for 10 degrees of freedom (*df*) is highly significant as significance value for two-tailed test was 0.00 which is less than 0.05. Therefore, since the t-cal was greater than the table value we accept the null hypothesis, therefore, there is no significant difference between the pre-test and post-test mean scores of gifted underachievers motivated with token reinforcement.

Ho₂: There is no significant difference between the post-test mean score of gifted mathematics underachievers exposed to token reinforcement and those not exposed to token reinforcement.

Table 6: Independent t-test sample on the difference in mathematics performance of gifted underachievers taught and exposed with token reinforcement and those not exposed with token reinforcement.

Variable	N	Df	\bar{X}	SD	t _{Cal} -Value	p-value
Control group	12	22	47.50	3.06	9.503	.017
Experimental group	12		65.08	5.63		

Table 6 above indicated the independent sample t-test comparison of the mean scores of control and experimental groups in mathematics test. The mean for the control group was found to be 47.50 while the mean for the experimental group was 65.08. The table also gave the t-value, degree of freedom, significance level (p-value). The t-value of 9.50 for 22 (12+12 – 2 as each group has 12 values) degrees of freedom (*df*) is highly significant as significance value for two-tailed test was 0.017 which was less than 0.05 significance level. Therefore, we reject the null hypothesis. Hence, there was significant difference in the mean scores between

gifted students mathematics underachievers exposed to token reinforcement and those not exposed to token reinforcement.

Discussion on Findings

The first finding of this study revealed that the students were able to improve in mathematics test after exposure to the treatment. This was evident from the performance of the students in the experimental group after the treatment as shown on tables 3 and 4. Also the study revealed that there was significant difference in the post-test mean scores between gifted students exposed to token reinforcement and those not exposed to token reinforcement. This study agreed with the finding of Nomann, Hanif and Rehna (2016) in their research titled, factors underlying academic underachievement among Pakistani secondary schools students. Their study revealed that those students exposed to token reinforcement were more successful in mathematics achievement than those not exposed to the treatment. The finding of the current study was in line with finding of Ritchotte, Rubenstein and Murry (2015) in their study titled “Reversing the underachievement of gifted middle school students; lesson from another field. Their findings revealed that the performances of those students exposed to token reinforcement were relatively higher when compared with those who did not receive any intervention. The study equally agreed with the finding of Akinkuolie and Sanni (2016) in their study titled Identification and Remediation of Factors Causing Underachievement of Students’ Performance in Senior School Certificate (SSC) Biology.

The second major finding revealed that token reinforcement improved the mathematics performance of JSSII Gifted underachievers in Federal Government Academy for the Gifted, Suleja. This finding was in line with the finding of Horsley (2004) in her research on underachievement in gifted and talented students where she examined the possible methods of identification, causal factors and intervention. The results indicated that token reinforcement was one of the most effective interventions in improving academic performance of gifted underachievers. The findings of this work were also in line with the finding of Behrend (2012) in a study titled “Self-perception of gifted achievers and underachievers; a phenomenological study”. Her study also revealed that token reinforcement when combined with parental support was effective in boosting the mathematics performance of gifted underachievers. It was also in line with the finding of Stone and May (2002).

Conclusion

On the bases of the findings of this study, it was concluded that there was significant difference in the post-test mean score between gifted underachievers exposed to token reinforcement and those not exposed to token reinforcement. One of the risks that the gifted students were confronted with was underachievement. This was a surprising fact for those with higher abilities. Underachievers can be found in every grade in school, from kindergarten to graduate school, in both sexes, across ethnic and socioeconomic groups, and in every occupation. Underachievement is a discrepancy between ability and actual performance that persists over time. This study highlighted the need to always motivate gifted underachievers in various ways like using token reinforcement so as to help them reach their potentials. Interventions designed to increase the achievement potentials of gifted underachievers need to start in early school for instance at JSS level. Unfortunately, because underachievement is complex, there was most likely never to be a single intervention that will reverse the academic underachievement of gifted underachievers in mathematics. This study proved that token reinforcement was very powerful and one of the most successful intervention to enhance mathematics achievement in gifted underachievers. Also from this study, it was observed that token reinforcement improved the mathematics performance of

JSSII Gifted underachievers in Federal Government Academy for the Gifted, Suleja. This amplified the need to use token reinforcement in enhancing mathematics performance of gifted underachievers because of its proven impact on raising the performance of gifted underachievers.

REFERENCES

- Abang, T. B. (2005). *The Exceptional Child; handbook of Special Education*. Jos: FAB Anieh Press.
- Academy, R. (2010). *Overview of School Model*. (August 2009), A case of problem-based learning method. *International Journal of Research in Education and Science* 1–13.
- Ayodele, O. J. (2012). Self-concept and Performance of Secondary School Students in Mathematics. *Journal of Educational and Developmental Psychology*, 1(1), 176–183. <https://doi.org/10.5539/jedp.v1n1p176>
- Baker, T.L. (2014). *Doing Social Research (2nd edn.)*. New York: McGraw-Hill inc.
- Balduf S., (2009): Underachieving gifted students: Review and implications. *Gifted Child Quarterly*, 26, 1.
- Bourgeois, S. J. (2013). Motivation for academically gifted students in germany and the united states: A phenomenological study. *Dissertation Abstracts International Section A: Humanities and Social Sciences*, 74(6-A(E)), No-Specified. Retrieved from https://uta-ir.tdl.org/uta-ir/bitstream/handle/10106/11507/Bourgeois_uta_2502D_11890.pdf?
- Clinkerboard, A. (2008). *Token reinforcement: Important Technologies of Behaviour Modifiers and Applied Behaviour*. (2), 497–504.
- Diaz, E.I. (2010). Perceived Factors Influencing the Academic Underachievement of Talented Students of Puerto Rican Descent. *Gifted Child Quarterly*, 42, 105 – 122.
- Freeman, C., Schiller, N. A., Tud, C. A. S., Clyde, B., Herreid, F. & Schiller, N. A. (2016). *National Science Teachers Association*. 42(5), 62–66.
- Guide, W. G. (2005). © *Special Olympics, Inc., 2005. All rights reserved*. 1–5.
- Hoover-Schultz, 2005. *Using Model, Cover, Copy, Compare, a Token reinforcement Program, and Discrete Trail Match to Sample Training for Teaching Functional Life Skills for a 13-Year-Old Middle School Student with Moderate Disabilities*. 2(4), 79–91.
- Hymer, B. (2009). *Gifted and Talented Pocketbook*. 128. Retrieved from <http://www.amazon.co.uk/Gifted-Talented-Pocketbook-Barry-Hymer/dp/1906610010>
- Ishak, Z. (2013). *A Priori Model of Self - Concept: The Effects of Students' Experiences in School.*, 12(I), 191–201.
- Karaduman, N. (2013). From high potential to gifted performance: Encouraging academically talented urban students. *Gifted Child Today*, 33, (4), 28-38.

- Kathleen, C. (1988). *School Improvement Research Series Research You Can Use*. (May). Retrieved from [https://educationnorthwest.org/sites/default/files/Instructional Token reinforcement.pdf](https://educationnorthwest.org/sites/default/files/Instructional_Token_reinforcement.pdf).
- Kolo, I. A. (1994). *Development of a nomination inventory and rating scale in a multiple criteria approach for identifying gifted children in Nigeria*. Unpublished Ph.D. thesis.
- Matovu, M. (2012). Academic Self-Concept and Academic Achievement among University Students. *International Online Journal of Educational Sciences*, 4(1), 107–116.
- McCall, W., Dixon, F., Hartley, K. & Hardin, T. (2002). *Perceptions of self-concept and actual academic performance in Math and English among High School Students in Kenya*. *Educational Research*, 1(September), 263–275.
- McCoach, D.B. & Siegle, D. (2014). Factors that Differentiate Underachieving Gifted Students from High Achieving Gifted Students. *Gifted Quarterly*, 47, 144 – 154.
- Morelock, M. (2002). On the nature of giftedness and talent: Imposing order on chaos. *Roeper Review*. 19(1): 4-12.
- National Curriculum (2005). *Educational Research*.
- Parsonson, B. (2012). *Evidence-based Classroom Behaviour Management Strategies* drbarry s. parsonson Ministry of Education: Special Education, Hawkes Bay Region. *Kairaranga*, 13(1), 16–23. Retrieved from <https://files.eric.ed.gov/fulltext/EJ976654.pdf>
- Reis, S. M. & Renzulli, J. S. (2010). Is there still a need for gifted education? *Learning and Individual Differences*, 20, 308–317. <https://doi.org/10.1016/j.lindif.2009.10.012>
- Reis, S.M. & McCoach, D.B. (2010). The Underachievement of Gifted Students: What Do We Know and Where Do We Go? *Gifted Child Quarterly*. 44(3), 152 – 170.
- Renzulli, J. S. (2007.). *Behavioural characteristics checklist for gifted students (for Teachers and Parents)*. Education.
- Rimm, F. (2010). Ability grouping of gifted students: Effects on academic self-concept and boredom. *British Journal of Educational Psychology*, 80 (3), 451-472.
- Rimm, S. (2004). *The Characteristics: Approach, Identification and Beyond*. *Gifted Child Quarterly*, 181 – 187. (See Vol. 2, P. 117).
- Rimm, S. (2015). *Why Bright Kids Get Poor Grades and What You Can Do About It*. New York: Crown.
- Witty, J. L. M. (2002). Mathematics and science self-concept: An international investigation. *Journal of Experimental Education*, 72(4), 331–346. <https://doi.org/10.3200/JEXE.72.4.331-346>.
- Yeung, R. (2014). Gifted Education. *Education and Urban Society*, 46(7), 798–825. <https://doi.org/10.1177/0013124512470162>.

TECHNOLOGY TEACHER EDUCATION IN THE MIDST OF NATIONAL CHALLENGES

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Abstract

Technical Vocational Education and Training (TVET) have since remained at the centre stage of most countries educational system. It has been relied upon as the engine house for the production of Technology Teachers in the real sense of the word, capable of imparting skillfully the requisite skills, knowledge and attitudes in various occupations. Therefore, it is the position of this paper which seeks to prove that the quest for professional TVET Teachers in Nigeria would remain a mirage if concerted efforts are not made at capacity building and image redemption of the noble TVET Teachers. Through a systematic literature review, the paper discussed among others, TVET, Technology Education, The role of Technology Teacher in the Nigerian society, Structure of Technology Teacher Education in Nigeria, challenges of Technology Teacher Education in Nigeria.

Keywords: *Technology Education, Vocational Education and Teacher Education (TVET)*

Introduction

Technology is simply defined as the scientific study and use of applied science particularly in engineering; application of this knowledge to practical tasks in education. Education is a tool that integrates individuals in the society towards self-realization, develop national consciousness, promote unity and strive for social, economic, political, scientific, cultural and technological progress of the teachers. The teacher in the educational process refers to a person who instructs to bring about a change in behaviour. He assumes various capacities as educator, instructor, tutor, lecturer, counselor, professor through teacher education. Teacher education as a component of any educational system is charged with education and training of teachers to acquire the competencies and skills of teaching for the improvement in the quality of teachers for the school system as in Technical Vocational Education and Training (TVET) (Ezegu, 2012).

Technical Vocational Education and Training (TVET)

According to Abubakar and Lawan (2011) defined TVET as a branch of Education concerned with preparing individuals for a livelihood. Oluwale, Jegede and Olamede (2013) described TVET as the type of education that emphasize the application of skills, knowledge and attitudes required for employment in a particular occupation or cluster of related occupations in any field of social and economic activity. In the same vein, Federal Republic of Nigeria (2013) referred TVET as those aspects of educational processes involving the study of technologies and related sciences, the acquisition of practical skills, attitudes, understanding and knowledge relating to occupations in various sectors of economic and social life in addition to general education. Kagara, Kudu and Salawu (2017) also viewed TVET as any

form of education whose purpose is to prepare individuals for occupation or group of occupations. Similarly, obiajulu (2018), defined TVET as a specialized education designed to empower learners through the development of their skills, human abilities, cognitive understanding, attitudes and work habits in order to prepare them adequately for the world of work or position them practically for self-employment after graduation. Furthermore, Ali (2018) also defined TVET as a comprehensive term which encompasses the study of technologies and related sciences and the acquisition of practical skills, attitudes, understanding and knowledge related to occupation in various sectors of economic and social life. Thus, TVET equips individuals with knowledge, skills, job habits and other competencies which enable them to engage in the work process as skilled workmen in the world of work.

For TVET to ensure good delivery, it must be responsive to needs of the society, technological progress and globalization trends. Design of the training programmes must be based on thorough and proper training need i.e enhanced delivery of the training, enhanced training facilities, mechanism for assessing training outcomes, enhanced opportunities for graduates and enhanced link with higher education systems (Paul, 2007).

Enhancement of the delivery of training includes having proper staffing, flexible curricular, adequate and proper instructional materials, stakeholders/employers involvement etc. While enhancement of training facilities on the other hand requires provision of training tools, adequately equipped workshops/production units, libraries and other training resource centres. Assessment of training outcomes entails carrying out training need assessment and labour market studies, commercial and service sector technical support and skill upgrading/updating. And to enhance link with higher education systems, TVET programmes should lead to higher qualification while encouraging research and officering higher level of specialization.

Objectives of the study

- To explore the challenges of Technology Teacher Education programme.
- To find out ways of averting technology teacher education challenges

Research Questions:

- What are the challenges of Technology Teacher Education Programme in Nigeria?
- What are the ways forward in solving Technology Teacher Education challenges in Nigeria?

The Role of the Technology Teacher in the Nigerian Society

Technology Teacher Education programmes are designed to prepare Teachers and Teacher Educators for various levels of technology education. At the junior secondary school level, technology education is designed to provide technological literacy and orientation to carriers in the technological field. Technology teacher educators prepare teachers for this programme at the NCE level.

The importance of technological literacy in a technological era can hardly be overemphasized. Since technological development has a direct impact on national development, the acquisition of technological literacy by all citizens will enhance national development. In other words, a technologically literate person will likely make more effective contribution to national development than a technologically illiterate person.

Ezegu (2012) rightly observed, even for those people who do not go into technological fields, it is imperative that they have technological literacy to be intelligent citizens. Accountants, stores clerks, history teachers, farmers or any one must make choices as consumers, voters, politicians, which affect the impact of technology. i.e technological literacy means that we must understand basic scientific concepts, know societal needs and moral constraints, be cognizant of the application of scientific principles to tools, materials and, to a certain extent be able to utilize those tools and materials.

Therefore, Technology Teacher Education Programmes are expected to prepare competent Teachers that will provide technological literacy at the junior secondary school through the effective teaching of basic technology subject, formally called introductory technology. The technology education offered at the junior secondary school level is referred to as pre-vocational education in the National Policy on Education.

A cardinal and traditional role of Technology Education in the society is technical personnel development. Nigeria's business and industrial sectors rely on technology education for their supply of technical personnel such as craftsmen, technicians, technologists etc. The bulk (about 70%) of the productive middle level personnel requirement of a nation's industries are technical college products, namely, operatives, craftsmen and master craftsmen. The proficient level of training of these categories of workers has a direct bearing on our industrial development. The Technology Teachers and technology teacher educators needed in the nation's institutions of learning-secondary schools, technical colleges, polytechnics and universities are products of technology teacher education programmes. Thus, the programme was faced with the following challenges; the picture of staffing depicts total weakness in all Trade Areas and problems of adequate Infrastructures and Equipments at almost all levels and types of Education in Nigeria (Ali, 2015).

The organizational set-up in Technical Colleges should have adequate number of qualified Teaching Staff for technical courses. At least one Technical Teacher per every fifteen or twenty students in the workshop. The following Teacher: Student ratio is recommended: for a practice oriented trade course like building the ideal ratio is 1:15 and 1:20 as the upper limit. The number of Teachers varies according to trade and workload, which is for a trade section that can offer four different craft level modules, each module requiring twenty hours of workshop practice weekly will require four instructors/teachers. Thus, the Teacher is the first and foremost to think of when discussing issues relating to skill acquisition at Technical Colleges. The Teachers are the one's involves in transferring knowledge, skill and attitude to the students using adequate infrastructures (Lawan and Iliya, 2018).

Infrastructures are defined as the systems which supports the operation of organization (Educational Institutions), which includes; Mechanical workshops, Wood workshops, engine bay, tray bay, sewing shop, Electrical and Electronics shop, Building workshop, Agricultural farmstead, experimental plots, Laboratories, Classrooms and storage area for the execution of practical work and safe keeping of tools and equipment. Equipment at Technical Colleges consist of furniture items such as benches and tables, hand and machine tools and instruments which are sometimes called "Instructional facilities" are required for the execution of practical work in the workshops, laboratories and classrooms by the Technology Teachers (Ali, 2016).

Lack of adequate qualified Teaching Staff, Infrastructures and Equipment at Technical Colleges and other institution of learning will resulted in inability to skillfully train the

Technical College students as designed by TVET as well as overstretched teachers, infrastructures and equipments, thereby resulting to less or no skill acquisition to impart by Technology Teachers.

Technology Teacher educators are expected to produce occupationally and pedagogically competent Technology Teachers in various technological fields who will in turn train the middle level technical personnel required by industry and business. The training of such personnel is done in Technical Colleges (for operatives, craftsmen and master craftsmen) and Universities/polytechnics (for technicians and technologists). (Ezegu, 2012).

The Structure of Technology Education in Nigeria

The education and training of Technical and a Vocational (technology) Teacher in Nigeria is done within different organizational pattern as follows:

- a) By establishing separate Technical Teacher training Colleges such as the Federal colleges of Education (technical), e.g. Gombe, Potiskum and Umunze.
- b) By having a Technical Teachers training wing or department within a multipurpose institution such as Ahmadu Bello University, Zaria, University of Nigeria, Nsukka and Federal University of Technology, Yola.
- c) By attaching Technical Teacher training departments or School to polytechnics such as the Kaduna polytechnic, the Polytechnic Ibadan and Institute of Management and Technology, Enugu.

Technology teacher education in Nigeria follows two alternative modes as follows:

- a. Consecutive mode: In this mode, pedagogy is offered as a follow-up to specific knowledge. For example, holders of HND and B.Sc in relevant technological fields can go for one year training in pedagogy to obtain PGDE/PGDSTE.
- b. Concurrent mode: in this mode both pedagogy and specific knowledge are simultaneously, such as in Federal Colleges of Education (Technical) Potiskum, Gombe and Federal University of Technology, Yola (Department of Technology Education). (Ezegu, 2012).

Challenges of Technology Teacher Education in Nigeria

Technology Teacher Education is faced with some challenges which include: Climate change, Globalization, Covid-19, Insecurity, etc.

Climate Change: Energy as an essential and dominant component in achieving the interrelated economic and sustainable development of any country, coupled with its increasing global demand at an alarming rate as a result of alarming growth of world population is becoming more expensive and environmentally unfriendly. In order to bolster the utilization of renewable energy in Nigeria, new skills need to be learned and developed by Technology Teachers for the sector through education and training such as TVET. Thus, these alternatives are intended to address the concern about fossil fuel such as carbon dioxide emission, as an important factor in global warming.

Globalization: Another challenge emanates from globalization as the world gradually changes to global village. The use of fossil fuel as energy instead of the alternative energy sources such as renewable energy like solar has caused visible damage to the environment in various forms and has affected our ecological cycle. Energy as an essential and dominant component in achieving the interrelated economic and sustainable development of any country with its increasing demand at an exponential rate as a result of exponential growth of world population, combined with fossil fuel depletion and the concern over environmental degradation put alternative energy sources such as renewable sources as future energy supply.

In Nigeria, alternative energy technologies (renewable energy technologies) not only present a more future oriented technology choice but are in addition a promising way for expanding access to electricity to a larger part of the population (both on and off the grid). In order to bolster the utilization of renewable energy in Nigeria, new skills need to be learned and developed for the sector through education and training such as TVET (Obiajulu, 2018).

Covid-19: Starting at the end of 2019, COVID-19 pandemic affected the health of hundreds of thousands of people, claimed many lives, disrupted learning and training, and threatened economies worldwide including Nigeria. As Nigerian government decided to impose the movement control order (MCO), which brought about big impact and challenges to education system that forced the shift to online learning by schools. As technology is widely used during pandemic, all parties are facing many issues and challenges during online training as the conventional teaching and learning including Technical and hand-on skills are more needed for TVET students rather than online learning. These challenges posed by COVID-19 present an enormous opportunity for the TVET sector to innovate and increase its attractiveness through new approaches ranging from experiential virtual training to remote placements with employers and help build bridges across countries and boost the inclusiveness of provision and work experience. Some of these opportunities includes; Utilization of digital marketing tools, New and greater audiences and students reach through online tools, including social media; closer alignment with employers, New avenues for engagement with local community partners, heightened perception and profile of TVET during pandemic, student entrepreneurship etc (British council, 2021).

In-security: Insecurity poses a serious challenge in Nigeria. Insecurity in Nigeria was as a result failure of the Nigerian government to address the challenges of poverty, unemployment and inequitable distribution of wealth. Insecurity made the nation to lose so many lives, properties and opportunities. In Nigeria, insecurity ranges from suicide bombing, vandalism, terrorism, kidnapping, farmers/herdsmen clashes, assassination, militating and armed robbery, violent crimes, ethno-religious conflicts, environmental degradation, among others.(Jacinta, Oluchi and Nzube, 2020).

Considering the aim and objectives of TVET which is geared toward enhancing the productive capacity of people, thus help to generate income and create wealth in order to avert unemployment and poverty which usually breed insecurity. It is therefore important that the productive capacities of the unemployed youths, school drop outs, physically challenged, marginalized groups, rural/dwellers and retirees should be enhanced through TVET for wealth creation and reduction of insecurity trough the followings:

- Training youths in various trades like; Automobile, Blocklaying and concreting etc at Technical Colleges.
- Provide an avenue for producing young entrepreneurs through courses of business education
- Provision of functional synergy between TVET and ENTREPRENEURSHIP Education
- Provision of more access to TVET eg. Open/distance learning and flexible skills development.
- Establishing National Vocational Qualification System designed and operated by NABTEB. Etc (Abdulrazak, 2019).

Conclusion

For TVET to ensure good delivery, it must be responsive to needs of the society, technological progress and globalization trends. Design of the training programmes must be based on thorough and proper training need i.e enhanced delivery of the training, enhanced training facilities, mechanism for assessing training outcomes, enhanced opportunities for graduates and enhanced link with higher education systems.

Recommendations

- TVET curriculum should be designed and reviewed at intervals to give training on skills that address not only immediate challenges but also future challenges such as climate change.
- Government should make concerted effort toward creation and monitoring more opportunities for TVET to innovate and increases its attractiveness through new approaches like entrepreneurship education.
- Government at regular intervals are to evolve a team of inspectors charge with responsibility of carrying out training need assessment and labour market studies, commercial and service sector technical support and skill upgrading/updating.
- TVET programmes should be design to link to higher qualification while encouraging research and officering higher level of specialization to avert the security challenges in Nigeria

REFERENCES

- Abdulrazak, U.M. (2019). Insurgency Threat to National Security: The role of Technical and Vocational Education. *Gombe Technical Education Journal*, 12(1), 88-97.
- Abubakar, A.N. and Lawan, A.B (2011). Assessment of Emerging Roles and Responsibilities of Community toward Vocational Skill Acquisition. *Journal of Teacher Perspective*, 5(1), ISSN 2006-0173, 119-125.
- Ali, L.B. (2015). Adequacy of Equipment for Skill Acquisition in Blocklaying and Concreting Trade for National Technical Certificate (NTC) in Kano State. *ATBU Journal of Science, Technology & Education (JOSTE)*; 3(1), ISSN: 2277-0011, 105-115.
- Ali, B.L. (2016). Adequacy of Infrastructural Resources for Skill acquisition in Blocklaying and Concreting Trade for National Technical Certificate (NTC) in Kano State. *Journal of Nigerian Association of Teachers of Technology (JONATT)*; 11(3), ISSN: 1118-4558, 127-133.
- Ali, I. (2018). Funding Technical and Vocational Education in Nigeria's Depressed Economy. *Bayero Journal of Science, Technology and Mathematics Education*, 1(1), 305-314.
- British council, (2021). How are vocational institutions innovating, evolving and changing as a result of COVID-19? (A study practice and perception in five countries).
- Ezegu, L.C. (2012). Lead paper presented at a National Conference on *challenges of Technology Teacher Education in Nigeria, organized by Federal College of Education (Technical) Potiskum, dated 26th-28th July, 2012.*
- Federal Republic of Nigeria (2013). *National Policy on Education*. Lagos: NERDC Press.
- Jacinta, I.O., Oluchi, C.O. , and Nzube, H.I. (2020). Technical Vocational Education and Training (TVET). Tool for combating insurgency in Nigeria. *International Journal of Vocational and Technical Education Research*, 6(3), print ISSN: ISSN 2059-1187, Online ISSN: ISSN 2059- 1195, 21-28.
- Kagara, A.B., Kudu, U.B. & Salawu, J.C. (2017). Effective Technical and Vocational Education and Training for Sustainable Economic Recovery in Nigeria. In A.S. Bappa, F.O.N. Onyeukwu, S.A. Adebayo, R. Ager & P.S. Williams (Eds) *Proceedings of the 30th Annual National Conference of Nigerian Association of Teachers of Technology (NATT), held at Lagos, 23-26.*
- Lawan, A. B. and Iliyasu, D. (2018). Adequacy and competency needs of Blocklaying and Concreting Teachers (BCT) for Skill Acquisition at Technical Colleges in a Depressed Economy. *Bayero Journal of Science, Technology and Mathematics Education (BAJOSTME)*, 1(1), ISSN 2635-3105, 245-256.

- Obiajulu, L. O. (2018). Technical Vocational Education and Training (TVET) A Tool For Alternative Energy Sources and Sustainable Economic Recovery in Nigeria. *Proceedings of the 31st Annual National Conference of Technology Education Practitioners Association of Nigeria (TEPAN), held between 15th – 18th October, 2018 at Maitama Sule University, Ado Bayero House, Kano.*15-22.
- Oluwale, B.A., Jegede, J.O. & Olamide, O.O (2013). Technical and Vocational Skills depletion in Nigeria and the need for policy intervention. *International Journal of Vocational and Technical Education*, 5(6), 100-109.
- Paul, S.Y. (2007). Lead paper presented at the National conference of Nigerian Association of Vocational and Technical Education (NAVTE), on theme: *Educational Reforms in Technical and Vocational Education and Training (TVET) for self Empowerment and National Development at Federal College of Education, Pankshin, Plateau State dated 9th August, 2007.*
- Sylvester I. Sylvester, Markus Kwaji, Ode S. Adikpe and Terdoo D. Aginde (2018). Technical Vocational Education and Training Policy and Its Implementation for Sustainable Economic Recovery in Nigeria: The Missing Link. *Proceedings of the 31st Annual National Conference of Technology Education Practitioners Association of Nigeria (TEPAN) held at Maitama Sule University, Ado Bayero House Kano, 15th-18th October, 2018*, 36-42

STRATEGIES FOR STRENGTHENING COUNSELLING SERVICES IN NIGERIAN UNIVERSITIES TOWARDS ENHANCE STUDENTS STABILITY IN THE MIDST OF NATIONAL CHALLENGES

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Abstract

This paper examined the various challenges bedeviling Nigeria, especially in recent times as it affects provision of education such as; agitations by different parts of the Country, insurgency, abductions, kidnapping, destruction of properties. Most of the victims displayed emotional instability, excessive fear, anxiety, anger, sadness and these affect the social, psychological, educational and economic well-being of all and sundry. The relevance of counselling in reducing the anxieties, stresses and health challenges, for appropriate adjustments in order to facilitate the effective functioning of students, especially in Nigerian University settings were discussed. In view of the various issues involved, the need for guidance and counselling programme which, is meant to help individuals understand themselves and their environments, so that they can function more effectively in the society becomes highly imperative. The counselling needs of the Students are paramount, if they are to become more risk-free and well-adjusted to face the tasks ahead of them. Recommendations offered include; Stakeholders should emphasize the need for putting in place consideration for health care system, coping strategies and counselling services in the school and non-school settings, so as to facilitate effective functioning of all stakeholders particularly the students' stability and other school personnel.

Keywords: *National Challenges, Counselling and University education*

Introduction

Guidance and counselling programme is considered as processes by which matured, responsible and fully functioning individuals are helped to explore, understand, accept and use their abilities, aptitudes and interest in relation to their world and society, so that they may be developed positively. When guidance and counselling services are properly provided, they assist students and young adults to accept themselves and their own weaknesses. This is an important step in growing towards maturity and adulthood. Its relevance in educational placement, career prospect and manpower development amongst others, can never be over-emphasized. Guidance as a programme of a school is seen as school's services designed to enrich each student.

The overall objective of Guidance and counselling is to facilitate the positive development of individuals, to make them effective, functional and efficient in their present and future activities. More importantly, the other goals of Guidance and counselling programme or services within the educational setting among others, is to enhance positive academic achievement and performance of stakeholders generally. It focuses on the provision of update, adequate and useful information on; Academic, career/vocational, as well as, personal and

social issues, which might jeopardize their academic progress and also others: students, parents/guardians, teachers, schools and larger communities (Agbajor, 2017).

Guidance and counselling services in a university setting promote academic, personal- social development and academic progress of students. Thus, the impact of counselling services on students' academic performance and achievement can never be over-emphasized. Counselling is an aspect of guidance, while others consider guidance as an aspect of counselling, the arguments continues and the relevance of both services in educational system is fundamental. Modern counselling services are highly needed and are very important, because they help to identify early enough talents among students. Several studies carried out (Akinade, 2012, Okobia, 2013 & Denga, 2016) indicated that, it is good for the students, because many undergraduates face anxieties and stresses and to be able to handle these kinds of problems they need guidance and counselling services. Thus, the provision of the services in a University setting would foster or bring about well guided and properly counselled undergraduates and graduates who would be good ambassadors/alumni of their Universities (National Universities Commission, NUC,2013). It is because of this reason that, provision of guidance and counselling services cannot be ignored. Educators or institutions must endeavour to provide the right and timely assistance to enable students not only survives critical stages of development, but also develops occupational competence that would make them employable. Guidance and counselling services helps individuals to live well, cope better, understand more, work efficiently and be more productive in any activity in which they embark.

This corroborates Anwana,(1984) and Abiri,(1996) as cited in Nuhu (2017) who argued that society may not have been plagued with a bad or group of disgruntled, frustrated and unrealistic individuals, if adequate school guidance and counselling services are provided. Hence, the major objective of a good guidance and counselling services in a university setting among others, is to help the undergraduate (students) acquire essential skills so as to effectively manage human problems often manifested as; disorder, crimes, delinquency, educational deficiencies, cognitive deficits developmental issues, academic under achievement and various forms of maladaptive behavioral problems. Students and teachers are critical factors in any educational setting; hence their welfare, well-being, and happiness are paramount in maintaining peace and stability; which are paramount to the success of set goals. Many factors account or promote students' which also facilitate their development, academic performance and achievement. Absence or ineffective mechanisms within university setting to address the needs and welfare of students often were identified by researchers (Lannap, 2002, Denga, 2016) as some of the reasons for students' restiveness, riots and other maladaptive behaviours.

National Challenges which necessitate Guidance and Counselling Services

Nigeria, as a developing nation has recently been facing national challenges especially insecurity, agitation for separation, economic depression and political instability which directly or indirectly has affected the provision of education at all levels. As a result people becomes victims of various kind of injustices or violence confrontations, perpetrated either by their own government or against them or by others such as; communal clashes, terrorism, riots, religious conflicts, natural disasters and so on (Sherriff, Sadeeque&Farouq, 2014)

According to Hamzat (2016 as cited by Nuhu, (2017)posited that displacement across the country in Nigeria is as a result of communal violence, internal armed conflicts and natural disasters such as flood. In any conflict situation and particularly those with ethnic or religious

underpinnings, the humanitarian needs are immense and the means to satisfy those needs within the conflict area are severely limited. Internally displaced civilian populations, some of them include students, move from one place to another seeking safety and protection inside their own country. Forced population movements resulting in mass exoduses constitute by their very nature infringements on international human rights and humanitarian law (Ladan, 2001). In Nigeria, conflicts arising from the activities of Boko Haram in the North East, agitation for self independence in South South and South East, as well as activities of Herdsmen in North West respectively; have resulted in high threats to lives and properties and death of thousands, as well as, displacement of millions of people, education sector and other aspects.

Azam, (2009) in Akuto (2017) listed the following as some of the challenges faced by victims of insecurities and IDPs in particular in Nigeria;

- a. Insecurity: Women and girls are been raped on daily basis as a result of insecurity in the camps. Youths indulge in hard drugs, smoking and other criminal activities.
- b. Trauma and Bitterness: The IDPs are traumatized and frustrated because of the situation they find themselves. Most of these IDPs live in bitterness due to painful separation from their spouses, families and loved ones.
- c. Hunger and Starvation: It is said that a hungry man is an angry man and because of the level of hunger and starvation faced by the IDPs you see them protesting and demonstrating with their children at the camps.
- d. Education: The IDPs are facing the challenge of educating their children or family members because they are always in transit or floating. More so, there are no provisions by government in this regard, among others.

It is in consideration of these challenges which have direct bearing on the provision of education, as well as, implementation of Guidance and counseling programmes as an educational service which is core and which also compliments instructions, administration and other components (Arijesuyo, 2012). The programmes are specialized and organized activities rendered to students for the dissemination of meaningful and factual information in the area of academic, vocational/career and personal-social needs that assists them to make choices. Akinade (2012) outlined some of these programmes as; orientation, career day/week, excursion, information service, seminar, workshops for parents, staff and students. Among the listed programmes, Agbajor, (2017) opined that counselling emerged as a major service in guidance programme which brings the counsellor and the client into intimate relationship, with a view to establishing confidentiality that facilitates clients to assess self and available potentials gemmates towards appreciative decision making. Counselling consist of several processes /procedures; used in assisting an individual in solving problems which arise in various aspects of his/her life or in assisting him/her to maximize his overall personal development, so, that he could be more effective, satisfied and more useful to the society in which he lives (Akinade, 2012).

The National Policy on Education (FRN,2014) and National Policy on Counselling (2018) stresses the need for guidance and counselling programme to be put in place at all educational levels and further outlined the objectives of guidance and counseling programmes in behavioural terms. In a series of studies Denga (2016) and Akinade (2012) remind us that, guidance and counselling services provide solution to social vices such as; examination misconducts, cultism, drug abuse, truancy, poor academic performance which are capable of reducing the standard and quality that education system ought to provide.

Counselling is also about strengthening the client ability to solve problems, make proper and appropriate decisions (Okobia, 2013). Counselling gives the counselee, the opportunity to freely express his or her feelings without any form of impediments based on culture, social or gender differences. However, through this relationship the counselee communicates feelings of concern, worries, as well as, suffering to the counsellor.

Counselling services are expected to be provided to students by a trained professional counselor (counselling psychologist). The activities of the counselor include; students, academic and non-academic staff, orientation services, placement, information services, career information services, appraisal/ continuous assessment and cumulative record keeping services, consultancy services (with parents/guardians/lecturers/teachers, caregivers, excursions and referrals services, as well as, the use of standardized psychological tests (Agi, 2013). The Counsellor is an expert in the area of human behaviour and behavioural changes who is much in tune with his gut-level-feeling (Okobia, 2013). The counsellor as the driver and administrative head of counselling unit is expected to possess certain professional skills which enable him/her to discharge counselling services effectively; this is because Counselling is both a profession and academic discipline and operates on sound grounded theories underpinned (Agi, 2013).

Nigeria, as one of the signatories Education for All Declaration in Dakar, Senegal recognizes education as a fundamental human right. The reason was because, education has long been considered as an effective instrument of economic, social and political growth, as well as, social development and principal means of enhancing the welfare of individuals in Nigeria. The National Policy on Education (FRN, 2014) states that education is an *instrument per excellence*. However, in spite of the acknowledged efforts by several stakeholders, Provision and implementation of counselling programme is still faced with so many challenges which militates against not only its success, but also, undermined the capacities of counsellors to contribute their quotas to the sustainable development of the country.

Counselling Services in a University Setting

One of the issues a University administrator must contend and grapple with is the effective management of university education to ensure effective teaching and learning, research and community development or relation. While the major challenges facing university education have been in the area of ; poor leadership confronting university management in Nigeria, inadequate equipment and facilities, excess enrolment among others (Abiodun-Onyebanji, 2014).

However, the world is changing fast as a result of globalization, creativity, innovation and the rest. University education system is undergoing structuring, modification and facing serious challenges which require strategic approaches in order to meet up the occupational and industrial, as well as the desire to develop quickly (NUC, 2013). Undergraduates' students do face a number of challenges which often affects their stability, attention and academic performance. For example there is procrastination, which has been defined in the literature as an act of postponing an activity or task until another time, which can result in not having time to complete the work, is a maladaptive behaviour among undergraduates' students (Choi &Moren, 2009). In explaining what procrastination means in clear term, Burka and Yuan (2009) as cited in Bagudu and Shuaibu (2021) state that procrastination is an emotional behaviour involving feelings, fears, emotions, hopes, memories, dreams, hesitations and emotional pressure which the procrastinator denies, because they procrastinate to avoid uncomfortable emotions. These types of behaviours are common and mostly prevalent

among students of universities in Nigeria, as such counselling strategies becomes necessary in order to make the students more stable, happy and ready to face their studies.

COVID-19 Pandemic and University Education Challenges in Nigeria

The outbreak of COVID-19 pandemic is a deadly which has become a serious health concern affecting all and sundry. The virus which spreads around the world first appeared in China in December, 2019. According to Zang (2020) COVID-19 is causing hundreds of thousands of death world-wide. Nigeria has also witnessed the spread of COVID-19 which affected governance, education system, as well as, the general public, the schools particularly the university setting where there are large concentration of students were not spared. Bashari (2021) observed that, teachers and educational personnel were asked to supply students with instructional materials via social media, because education system was adversely affected by the virus. Deployment of technology was emphasized to replace physical contact with learners.

One of the education challenges of University Education brought about by COVID-19 pandemic in Nigeria, has undoubtedly not been easy; due to the various issued involved. It is on record that COVID-19 pandemic has created general atmosphere of anxiety, fear, uncertainty, helplessness, insecurity and depression of the national economy. Anxiety, stresses fear and economic depression frequently occurs as a result of the prevalence of the COVID-19 virus. According to Bao, Sun, Meng, Shi, and Lu (2020) due to COVID-19 mental health illness including anxiety, depression, stress and sleep disorder become prevalent across the world. People are under risk of infection, stress and burnout.

In Nigeria several measures were taken in order to respond to the challenges brought about by the deadly virus such as; close down of schools, markets, religious centres during the first phase of the outbreak of the virus. At the subsequent stages there were restriction of movement and total lock down in most parts of the Country. Public enlightenments, safety, rules and measures such as restricting of gathering of people, washing of hands with sanitizers, social distancing, wearing of face mask among others. In educational institutions in particular, strict measures were also taken which affected all the stakeholders, were considered by many to have completely paralyzed the school system. Teachers and other administrative personnel were handicapped as they could not attend to their official duties. Teaching and learning were disrupted. Students were frequently monitored by parents, guardians and caregivers.

A University setting is an important place in Nigerian education system, because it holds human and material resources together and offers students the opportunity of achieving primary purpose of acquiring skills, moral and attribution to succeed in life, as well as, high level training (Fareo, 2012). As for Aliyu (2009), a university is a place where learning experiences are coordinated and various instructional efforts and materials are housed.

By definition, 'to manage' means to handle, to control, to organized, to alter by manipulation and or to carry out an action for the purpose of achieving particular goals or objectives. While, management of skills on the other hand has been defined by Ajayi as cited by Aliyu(2009) 'as skills of combining human and materials resources to achieve organizational goals at a given time'. In a more conventional context, managementskills can be seen as the science of getting people to do things in order to achieve definite organizational goals. Thus, management means having an effect and ability to accomplish certain tasks successfully as intended or expected.

Role of Counselling in Managing of University Education amidst National Challenges

Managing University Education in the midst of national challenges brought about by COVID-19 in Nigeria, is another issue posed by the virus which requires Counselling strategies. There is the link between managing university education in the midst of this challenges and Counselling services. Several factors were identified by many researchers as some of the causes of students' instability in various universities campuses. According to study conducted by Difonzo, Gall and Quante, (2008) explained that poor academic performance and learning difficulties leads to violent behaviours among learners in schools. Natta (2016) also revealed that another factor that often influences students' stability and adjustment in a university setting is that of social media in terms of enhancing students' interaction, academic performance and achievement can never be over-emphasized.

However, one of the reasons for advocating the use of Counselling service is, because Counselling does not aim at solving problem for clients, but rather equipping the individuals or groups to solve their problems themselves. In view of these problems, it has become necessary to respond to the challenges, by way of counselling intervention, so that coping skills, training, educational and counselling strategies can be provided, in order to reduce or solve the problems affecting the stability of Nigerian students

The objectives are to make them functional, effective education which would facilitates the skills adjustment, self- confident, etc, so that each and every citizen can contribute to his/her own personal and community development, economically, socially and politically. It will also motivate them to overcome self-defeating beliefs, superstitions, insecurities, fears and unlock personal limitations to empower their self-esteem, guide them to pin-point those behaviours and challenges that surround them to clear the path to achieve the highest level of satisfaction in their economic, social and professional endeavours. This is the link between the situation at hand and Guidance and counselling programme or service is designed for specific duties. It does not aim at solving problem for students, but rather equipping the individuals or group of individuals to solve problems for themselves. The following Counselling strategies would enhance effective students' stability while pursuing their studies with minimum. disruptions.

Conclusion and Recommendations:

Nigeria as a developing country has been battling with various national challenges ranging from insecurity, kidnappings, and banditry and terrorisms activities, agitations for separation among others. The negative effects of these challenges on the victims on one hand, and education, socio-economic and political aspects on the other, can never be under-estimated. The national challenges have greatly affected the smooth provision of university education, stability and well-being of students in various campuses. Managing university education amidst numerous national challenges brought about by COVID-19 in Nigeria is another problem. The need to overcome or reduce the challenges by providing counselling intervention becomes highly imperative, so that coping skills, training, educational and counselling strategies can be provided, Thus, counselling strategies such as motivation, behaviour modification and group counselling are some of the effective strategies to promote stability of university students in order to reduce or solve the problems facing them in managing the university education system in Nigeria and the stability of other stakeholders working in the university system.

Counselling strategies, if properly implemented can ensure happiness, proper adjustment of all the students to be able to contribute to the effective sustainable development. Therefore, it is not only recommended that Counselling services be made functional and effective, but should also be made part and parcel of the entire university education, as already directed by National Universities Commission (2013). The Counselling strategies for enhancing students' welfare thereby increasing their stability are recommended and may include; Behaviour modification, motivation, emphasizing on positive reinforcement, as well as, carrying all and sundry via social media and networking. These would go a long way in making the students to be more focused.

REFERENCES

- Abiodun-Onyebanji, O.J. (2014). Issues and Prospects in Management of University Education In Emunemu, B.O.& Akinwumi, F.S eds. (2014). *Educational Management in Africa: Papers in Honour of Professor John Iheukwumere Nwankwo*
- Akinade, E.A, (2012). *Introduction to Modern Guidance and Counselling: A basic text for tertiary institutions*. Bright up Publishers: Ibadan – Nigeria.
- Agbajor, T.H.(2017).Evaluation of Guidance and Counselling Programmes in Nigerian Educational System. *International Journal of Innovative Education System*, 5, (1), 1-8.
- Akuto, G.W. (2017). Challenges of Internally Displaced Persons (IDPs) in Nigeria: Implications for Counselling and the Role of Key Stakeholders. *International Journal Innovative Psychology and Social Development*. 5(2): 21-27.
- Aliyu, Y.S.(2009). Effective Classroom Management *UMYU Journal of Research*, Volume 1 Number 1 pp. 140- 145 ISSN: MAIDEN EDITION
- Arijesuyo, A.E.(2012).Evaluation of Counselling and human development Programme implementation in South West Nigerian universities. *The Counsellor*,31,(1),37-45.
- Bagudu,A.A & Shuaib, A.A. (2021). Counselling Strategies for the Management of Academic Procrastination Among Undergraduates Students of Nigerian Universities. *Katsina Counsellors, Journal of Counselling*, Vol. 3, No.1,39-47.
- Bao, Y., Sun, Y., Meng, S.,Shi, J. & Lu, L. (2020). 2019-nCoV epidemic: address mental health care to empower society. *The Lancet*, 395(10224), e37-e38.Retrieved on 25/01/2021.
- Bashari, K. (2021).Impact of COVID-19 Pandemic on Education and Social Media for Sustainable Development. *Katsina Counsellors, Journal of Counselling*, Vol. 3, No.1,64-73.
- Denga, D.I. (2016). *Guidance and Counselling in School and Non- School Settings*. Published by Double Diamond Publishers: Port-Harcourt. Nigeria
- Choi,J.N & Moren, S.V. (2009). Why not Procrastinate? Development and Validation of A new procrastination Scale. *Journal of Social Psychology*, 149, (2), 195-211.
- Federal Republic of Nigeria (2014).*National Policy on Education (Revised)*.Lagos:Nigerian Educational and Research Development Council (NERDC).
- Federal Ministry of Education, (2021).*National Policy on Counselling*. Abuja: Nigeria
- Fareo, DD (2012). Schooling and Standards in Nigeria Educational System: Challenges and Prospects. *Nigerian Journal of Educational Research and Evaluation*,Vol.II,No. 12, 30-41

- Denga, D.I. (2016). *Guidance and Counselling in School and Non-School Settings*. Published by Double Diamond Publishers: Port-Harcourt. Nigeria
- Lannap, A.L. (2002). *Guidance and Counselling for effective management of Student Personnel services*. Printed and published by Mono Expressions Ltd. Jos: Nigeria.
- National Universities Commission, (2013). *Guidelines for the establishment of Counselling and Human Development Centres in Nigerian Universities*. A publication of the N.U.C: Abuja Nigeria.
- Nuhu, M.B & Daninna, A.A. (2021). Revisiting Counselling Services in Umaru Musa Yar'adua University, Katsina, Nigeria. *Katsina Counsellors, Journal of Counselling*, Vol. 3, No.1, 39-47.
- Nuhu, M.B. (2017). *The Role of Guidance in Enhancing Quality Education in Nigeria*. A paper presented at a Career Day organized by Youth Development Association Batagarawa, on 16th March, 2017 at Government Science Secondary School Batagarawa, Katsina State, Nigeria.
- Okobia, O.C. (2013). *Counselling Against Deviant Behaviours for National Development*. In *Delta Journal of Guidance and Counselling: A Research Journal*. Volume I. Number 1, 1-9
- Sheriff, G. I., Sadeeqe, A. and Farouq, B. (2014). Resource based conflicts and political instability in Africa: Major trends, challenges and prospects. *International Journal of Humanities, Social Sciences and Education*, 1 (9), pp. 71–78. Available from: <www.arcjournals.org> [Accessed 29 January 2017].
- Hamzat, A. O. (2016). Challenges of the internally displaced persons and the role of the society. Accessed from: <https://www.thenigerianvoice.com/news/113484/challenges-of-the-internally-displaced-persons-and-the-role.html> 10/05/2022
- Ladan, M.T (2001). *Introduction to International Human Rights and Humanitarian Laws*, A.B.U Press, Zaria.

ADULT ENTERPRENUERSHIP EDUCATION; A NEW AGENDA FOR POVERTY REDUCTION IN POST COVID-19 ERA IN NIGERIA**By****Mariya Kabir Umar**

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Abstract

This paper examines Adult and Entrepreneurship Education a new agenda for Poverty reduction in Post Covid-19 Era in Nigeria. The emergence of Covid-19 in Nigeria led to the total lockdown of the whole country. Businesses, public services, social activities, banks as well as other services were forced to stopped. With the decline in Covid-19 cases in Nigeria, towns and cities are gradually opening up and normalcy is returning. However, as a result of the hardships faced by citizens, there is the underlying need for people to learn additional skills and competencies that can enable them cope with living in hard and difficult circumstances. Adult entrepreneurship education refers to knowledge, skills and information given to adults to develop, organize and manage business ventures along with any of its risk in order to make profit. The objectives of adult and entrepreneurship education among others are to offer functional education for the youth that will enable them to be self-employed and self-reliant, provide youth graduates with adequate training that that will enable them to be creative and innovative in identifying novel business opportunities, serve as a catalyst for economic growth and development, offer graduates of tertiary institutions with adequate training in risk management to make risk-bearing feasible and reduction of high rate of poverty. Adult Entrepreneurship education is a key driver to the economy, wealth and a high majority of jobs are created by small businesses started by entrepreneurially-minded individual many of whom go on to create big business, plays an important role in employment generation and job creation and conscientizes and enlighten adults to change in their behavior and attitude towards poverty. Accordingly therefore, the paper recommends among others; collaborations between National Mass Education Commission and Federal Ministry of Trade and Investment to create emergency programmes to ease the hardship caused by Covid-19 period in Nigeria.

Key Words: *Adult Entrepreneurship Education, Poverty, Covid-19, Poverty Reduction, Nigeria.*

Introduction

Covid-19 is a world pandemic caused by a virus called Corona which originated from Wuhan province in China. The disease spread to other parts of the world between December 2019 to March 2020 and thereafter. This infectious disease had affected world economy generally. Covid-19 has affected the social, political, cultural, religious, educational and economic development of the world. The Covid-19 has affected 211,887, 208,992 has recovered while 2895 died from the infectious disease in Nigeria (WHO, 25th October, 2021). The emergence of Covid-19 in Nigeria led to the total lockdown of the whole country. Businesses, public services, industries, social activities, banks as well as all essential services were forced to a compulsory standstill while the challenges of living escalated. Various households experienced varying degrees of hardships. There were several illnesses, deaths and poverty persisted all over the land. The infection has led to total lockdown of all the states in Nigeria which in turn had affected various sectors of the economy in which education suffered major setback with the total close up of schools and learning centers at all tiers and levels of

government in Nigeria. Both conventional educational institutions and adult learning centers were all locked down as part of measures to avert the spread of the pandemic.

The closure of educational institution as the preventive measure against the spread of Covid-19 has affected the educational system in Nigeria. Zamira and Linda cited UNESCO (2020) that there were more than 1 billion and 575 million students in approximately 188 countries around the world are reported to have been affected by the closure of schools and universities due to preventive measures taken by countries against the spread of Covid-19. The spread of Covid-19 has also caused fear, anxiety and other concerns to different citizens in different part of the world. The outbreak of Covid-19 pandemic increased the gaps in the educational sectors in Nigeria and in the global world. Though Covid-19 pandemic is novel, but already has noxious effect on humanity. The covid-19 outbreak has created closure of educational system and the global health issues and concerns proved difficult to be handle and manage by global health system. The covid-19 pandemic affected all aspect of human activities globally ranging from education, sports, entertainment, transportation, economy, businesses and politics. The entire world was in an overwhelming distressed condition as a result of Covid-19 threats. The reality of the situation was challenging to bear and the educational system remains the most affected.

The experiences from Covid-19 gives us various lessons and thoughts. It tells us that we are not educated, or if we are, it shows us that the education we received is not functional and that we must continue to educate on continuing bases so as to learn to cope with living in an ever-changing world so as to acquire the skills with which to adapt with the changing world. With the decline in Covid-19 cases in Nigeria, towns and cities are gradually opening up and normalcy is returning. However, as a result of the hardships faced by citizens, there is the underlying need for people to learn additional skills and competencies that can enable them cope with living in hard and difficult circumstances. This calls for the recognition of adult and entrepreneurship education programmes that can equip the people with the knowledge, skills and competencies needed in an ever-changing world of opportunities. This brought us to the issue of addressing the seeming deficiencies inherent in our educational systems because for Nigeria to address the problem of Poverty in Post Covid-19 era, it must first and foremost, address the issue of education generally and entrepreneurship adult education specifically since it is the best way that can empower adults and youth as well as free them from the shackles of poverty and also assist them to become aware of themselves and their society. The paper therefore examines the roles of adult and entrepreneurship education in addressing the hardship, hunger, poverty and economic breakdown caused by Covid-19 pandemic in Nigeria.

The Concept of Adult Education

Adult Education is an important instrument for the advancement of both the individual and his society. Education is also an important catalyst for the realization of economic, social and political development of any nation. This is why education was made as an index of human development alongside life expectancy, poverty level and general standard of living. Adult entrepreneurship education prepares and equips an individual with knowledge and skills to start a business for self-reliance, wealth creation and improving quality life. In other words, adult entrepreneurship education seeks to provide learners with the necessary knowledge, attitude and skills to start and run a business.

Adult Education is a package of educational programmes for adults outside the formal conventional school system which is aimed at providing more information and better knowledge and skills for improving their quality of life and their earning capacity.

Several definitions are put in place to define the concept of Adult Education. According to Omelewa, (1985), adult education is any training given to adults. Paiko (2012), cited the First International Congress on Comparative Study of Adult Education defined Adult Education as

“A process whereby persons who no longer attend school as a regular full-time basis (uncles full-time programmes are specially designed for adults) under sequential and organized activities with the conscious intention of bring about changes in information, knowledge, undertakings and skills appreciation and attitudes or for the purpose of identifying and solving personal or community problems”.

In order to reduce the confusion usually posed by conflicting definitions of Adult Education, Paiko (2012), quoted a comprehensive definition of adult education by UNESCO (year) as:

“The entire body organized educational processes whatever the content, level and method, whether formal or otherwise, whether they prolong or replace initials education schools, colleges and universities as well as in apprenticeship, whereby persons regarded as adults by the society to which they belong develop their abilities, enrich their knowledge, improve their technical or professional qualification or are turned in a new direction, bringing about changes in their attitudes or behavior”.

Adult Education comes in various forms and programmes. It could be for acquiring literacy and numeracy skills, vocational education skills, such as carpentry, sewing, motor mechanic and so on.

The Concept of Entrepreneurship Education

The operational definition of entrepreneurship is the willingness and ability of a person or persons to acquire educational skills to explore and exploit investment opportunities, and establish and manage a successful business enterprises (Adamu, 2008). Nwangwu (2007) opined that entrepreneurship is a process of bringing together the factors of production, which include land, labour and capital, so as to provide a product or service for public consumption. Entrepreneurship is the act of starting a company, arranging business deals and taking risks in order to make a profit using the education skills acquired. Another view of entrepreneurship is the term used when someone who has innovative ideas and transforms them to profitable activities.

According to Osuafor, Okeke and Nnorom (2010), entrepreneurship education is education that prepares and equips an individual with entrepreneurship skills that will enable him/her start off a business for wealth creation and cope with its attendant financial risks. In other words, entrepreneurship education seeks to provide students with the knowledge, skills and motivation to start and run a business. The emphasis in general education has been on providing life and occupational skills that will enhance the potentials of individuals, reinforcing self-sufficiency and improving quality of life.

Entrepreneurship education seek to provide its students with knowledge, skills and motivation to encourage entrepreneurial success in a variety of settings. In other words,

entrepreneurship education provide young adult and youth with necessary knowledge, skills and attitudes to start businesses in order to make profit and create job opportunities for others.

The Objectives of Entrepreneurship Education

The overall goal of entrepreneurship education is to inculcate the knowledge, attitude and skills required to facilitate venture creation and business growth among the populace so that commercial ventures and investments can thrive well. According to Paul (2005), entrepreneurship education is structured to achieve the following objectives

- i. Offer functional education for the youth that will enable them to be self-employed and self-reliant.
- ii. Provide youth graduates with adequate training that that will enable them to be creative and innovative in identifying novel business opportunities.
- iii. Serve as a catalyst for economic growth and development.
- iv. Offer graduates of tertiary institutions with adequate training in risk management to make risk-bearing feasible.
- v. Reduce high rate of poverty.
- vi. Create employment
- vii. Reduce rural-urban migration
- viii. Provide young graduates with enough training and support that will enable them to establish a career in small and medium-sized businesses.
- ix. Inculcate the spirit of perseverance in youths and adults which will enable them persist in any business venture they embark on.
- x. Create smooth transition from a traditional to a modern industrial economy.

The objectives of entrepreneurship education are relevant in Nigeria, considering the level of unemployment in the country, especially among the youth. Generating the spirit of entrepreneurship among the populace would help to reduce the problem of unemployment in the country.

Adult Entrepreneurship Education

Adult entrepreneurship education refers to knowledge, skills and information given to Adults to develop, organize and manage business ventures along with any of its risk in order to make profit. Nwagwn (2007). Entrepreneurial opportunities in adult and non-formal education includes instructor training, special education, early education and child daycare, organization of literacy centres and remedial education, building and construction, catering and hospitality, cosmetology and beauty therapy, creative design and craft, business and computer technology, fashion and interior design, motor mechanics and repair, carpentry work, poultry, fish farming, trade among others.

Adult entrepreneurship education concertized and orients adult and youth to change in their behavior and attitudes towards poverty. It helps adults and youth to embrace new and improve techniques for a better way of living socially and economically. It improves employment opportunity and provision of skilled entrepreneurial individual who produce economically and independently as individuals and as groups.

It is generally believed that adult entrepreneurship education is central to economic development, employment creation and improvement of standard of living of people in different communities. In Nigeria, generating and promoting the spirit of entrepreneurship education among youths and adults would help in reducing the problem of unemployment and promote self-reliance and improve the quality of life.

The Concept of Poverty

Poverty is social phenomenon in which a people are unable to fulfill their basic necessities of life. Poverty has been recognized as a major hindrance the process of growth and development in most developing countries. Omolewa (2001) submitted that poverty is the inability to live a decent life with respect to food, shelter, good healthcare and transport. Abe (1999) viewed poverty as a state of being poor as having very little money with which to procure one's basic needs. It is regarded as an aberration, misfortune, deprivation and lack of basic amenities of life for human survival.

The level of poverty is not limited to individuals, but also affects group as well as nations. However, the level of poverty of individuals can build up to affect a nation; hence, there exists the poor nations of the world where the number of those who cannot afford basic needs of life and numbers that of those can afford them to a great extent.

Poverty is a complex and multidimensional phenomenon. It is a common condition in all parts of the world, especially in the less-developed nations of Asia and Africa. The phenomenon is not only an expression of life situation but also a state of mind and a perception of self in the complex web of social relations. Poverty is also context-specific, in the sense that its constituents vary from place to place. The concept is differently used in countries which have attained higher levels of economic development than in those which are still in the developing stages. It is, therefore, a social problem that defies a precise and universally acceptable definition.

This notwithstanding, Ekundayo (2001) defined poverty is a situation of individual deprivation of the basic needs of life, which calls to question the essence of his/her social existence. Ebirim (2008) and Nnsien (2013) defined it as a state of chronic insufficiency and economic inequality, a condition of want and scarcity, and a dependence on others for every necessity of life. The UNDP (2004) stated that poverty is a multi-dimensional phenomenon characterized by deprivation of entitlements through lack of access to economic and social resources, political participation and consultation. In order to understand the definition and operationalization of the concept of poverty, we need to look at its different dimensions, such as absolute, relative, and subjective poverty (Abe 1999)

- i. *Absolute poverty* usually focuses on basic human needs and is often measured in terms of resources required to maintain health and physical efficiency. It is a situation in which the property owned and controlled by an individual or member of a community are not enough to ensure that he or she can meet the basic needs of life, such as housing, food, clothing, shelter and medical facilities. This is achieved by drawing a poverty line and defining being poor. An individual whose income falls below that figure line (or level of living index) is regarded as poor.
- ii. *Relative poverty* refers to a situation where the poor, though not starving, is deprived of many good things of life which others take for granted. The essence of relative poverty, therefore, is that a few individuals in the society dominate access to social resources, goods, and services to the detriment of many who cannot have their basic needs met.
- iii. *Subjective poverty* refers to the subjective feeling of poverty by an individual. It is a matter of the individual's feeling about his or her social condition, that is, whether or not such an individual feels that he or she is poor.

Causes of Poverty

Poverty is caused by a variety of factors, such as economic, biological, structural, bureaucratic, and socio-cultural factors. These are discussed below:

- i. Economic factors: this is arguably the strongest causative factor of poverty. Taking into consideration the economic power of money, a person can purchase whatever his or her needs and service are – build a good house, afford good food, obtain medical attention, and get good education, among others. Many Nigerians do not enjoy the minimum standard of living consistent with human dignity. The total earnings of many are not sufficient to meet their minimum necessities for the maintenance of physical efficiency.
- ii. Biological/health factors: Sometimes, poverty is attributed to the totality of the personal background, disposition and feelings of an individual. For example, a poor person could blame his or her predicament on biological and/or health disposition. The poor living condition of many could be attributed to physical or genetic defects, such as blindness, poor medical status, and/or physical deformity, among others.
- iii. Structural defects: This refers to the consequences of unfair distribution of resources usually brought about by skewed socioeconomic structure.
- iv. Bureaucracy: Poverty can be caused by the way and manner bureaucratic institutions are organized, function and deliver services to the citizenry. Government institutions may fail to meet the needs of the marginalized in the society and thus reinforce their disadvantaged position.
- v. Income: The lack of income – measured by income derived by the household head – is a major cause of poverty.
- vi. Participation level: Poverty can also be caused by low-level participation or nonparticipation in the economic life of a community. Poor participation could lead to very poor or limited knowledge and skills needed for quality economic decisions, as well as those pertaining to personal welfare.
- vii. Socio-cultural factors: These refer to laws, customs and traditions that forbid and exclude a group or section of the population from certain economically productive activities, usually on the basis of gender or religion, among others.

Odumosu. (2003) also highlighted the following as causes of poverty in Nigeria:

- i. High cost of living
- ii. Unemployment
- iii. Insecurity and other social crises
- iv. Government's inability to provide basic social amenities
- v. Poor access to educational opportunities or high-level illiteracy
- vi. Poor productivity
- vii. Lack of good feeder roads
- viii. Ill-health
- ix. Insufficient farmlands
- x. Insufficient irrigation systems
- xi. Lack of storage facilities
- xii. Lack of electricity
- xiii. Subsistence farming, with nothing to sell for cash
- xiv. Frustration from life's ambition
- xv. Reckless spending during social functions or ceremonies/local festivals

Effects of Poverty

Osuji (2001) summarized the effects of poverty on the victims as follows:

1. Inability to secure balanced feeding
2. Inability to clothe adequately
3. Being unable to afford basic necessities of life, such as food and shelter
4. Not being able to meet social and economic obligations
5. Lack of gainful employment
6. Physical insecurity
7. Inadequate skills and assets
8. Ignorance
9. Lack of self-esteem
10. Being socioeconomically powerless

Role of Adult Education and Entrepreneurship in Poverty reduction in Post Covid-19 Era

Poverty reductions are certain measures that are put in place in order to rescue individual or society from poverty. These measures can be put in place either by government, individual and/or philanthropist and nongovernmental organizations.

Covid-19 has in Nigeria had brought enormous hardship as a result of the total lockdown in some part of Nigeria. This lockdown has a serious impact on our economy as well as on individual means of livelihood. Adult and entrepreneurship education is beneficial to both individual and society. This is because it empowers the youths to be entrepreneurs and self-reliant and turn hard times of life into opportunities. Thus, adult entrepreneurship education can reduce the prevalence of poverty among youths and adults in the following ways:

1. Adult Entrepreneurship education is a key driver to the economy, wealth and a high majority of jobs are created by small businesses started by entrepreneurially-minded individual many of whom go on to create big business. People exposed to entrepreneurship frequently state that they have more opportunity to exercise creative freedom, high self-esteem and overall greater sense of control over their lives. Thus, adult entrepreneurship education will help in boasting and strengthen the poverty reduction in this post Covid-19 era.
2. Adult Entrepreneurship Education provides equal educational opportunity and access for every Nigeria including school dropouts, illiterate rural and urban adults, youths, women and industrial workers among others. Corroborating this submission, the World Bank (2001) states that the more the access to quality education and training, the less poverty experience in the nation concerned especially employing non-formal education andragogical strategies.
3. Adult Entrepreneurship education plays an important role in employment generation and job creation. It serves as a foundation for the supply of potential entrepreneurs who are always ready to explore new ideas at the slightest opportunity. In other words entrepreneurship education is an important tool for youth unemployment reduction in Nigeria in post Covid-19 era. Unemployed youth can be gainfully self-employed through Adult Entrepreneurship education.
4. Adult Entrepreneurship Education serves as an instrument for directing professional knowledge and bringing the light of general culture to illuminate the technicalities of special pursuit. In this regard, Olajide, Okemakinde and Okemankinde (2008) pointed that adult education enhances the survival capability of all adults, equipping them with technical, vocational, economic, political, social and cultural skills that will bring about a degree of self-fulfillment, happiness, empowerment and meaningful life.

5. Adult Entrepreneurship education is also important to the economy and community in general. A person who has entrepreneurial skills will recognize a genuine opportunity when she/he comes across one.
6. Adult education conscientizes and orientate adults to change in their behavior and attitude towards poverty. It helps condition them towards embracing new and improved techniques, progressive ways and action for higher standard of living socially and economically.

Conclusion/Recommendations

With the decline in Covid-19 cases in Nigeria, towns and cities are gradually opening up and normalcy is returning. However, as a result of the hardships faced by citizens, there is the underlying need for people to learn additional skills and competencies that can enable them cope with living in hard and difficult circumstances. Adult entrepreneurship education refers to knowledge, skills and information given to Adults to develop, organize and manage business ventures along with any of its risk in order to make profit. Adult Entrepreneurship education is a key driver to the economy, wealth and a high majority of jobs are created by small businesses started by entrepreneurially-minded individual many of whom go on to create big business, plays an important role in employment generation and job creation and conscientizes and enlighten adults to change in their behavior and attitude towards poverty.

The paper recommends the followings:

1. The National Mass Education Commission (NMEC) should collaborate with the Federal Ministry of Trade and Investment to create programmes for Nigerian Youths and adults that would ease the hardship of the previous lockdown during covid-19 periods.
2. In Nigeria, the level of awareness about entrepreneurship education seems to be very low. It is very essential for Federal Ministry of Trade and Investment, National Mass Education Commission (NMEC) to organize seminars and conference on adult entrepreneurship education.
3. Entrepreneurship education should be fully recognized, integrated and made a compulsory into the Nigerian education curriculum both at the basic and post-basic level as well as in the adult and non-formal education sector in forms of venture creation, financial literacy, business education and so on.

REFERENCES

- Abe, C. V. (1999). Patterns of Career Awareness and Vocational Maturity of JSS students. *Journal of Functional Education*, 1 (1): 54-56.
- Adamu, A. U. (2008). *Education: Yesterday, Today, Tomorrow*. Leadership Press, Abuja, Nigeria.
- Akinpelu, J. A. Okedara, J. T. & Omolewa, M. A. (1988). *Language and Adult Education: Essays in Memory of S.H.O Tomori*. Ibadan University Press Ltd, Ibadan: Nigeria.
- Ebirim, U. (2008). *An Overview of the Effects of Poverty in Nigeria*, Malthouse Press Limited, Lagos: Nigeria.
- Ekundayo, T. A. (2001). *Nigeria Social Structure, Poverty Alleviation and National Rebirth*. Leadership Press, Abuja, Nigeria.
- Anyawu, J. T., Omole M. A. L. (2001) *Philosophical Foundations of Adult and Non-Formal Education*, Ibadan University Press Ltd, Ibadan: Nigeria.
- Nnorom, N. R. (2009). Strategies for and Challenges to Entrepreneurship Education in Science for Sustainable Development. *UNIZIK Journal of Education*, 5 (1), 30-37.
- Nnsien, A. (2013). Sure P Scheme: A child of Circumstances? Daily Independence, retrieved from www.dailyindependence.com/2013/02/sure-p-scheme-a-child-of-circumstances
- Nwagwn, I. O. (2007). *Fundamentals of Entrepreneurship in Educational Management*. Cheston Books Limited, Enugu: Nigeria.
- Odumosu, O. Ajala, A., Nelsan, T. N, Obioha, E., Alouge, S. & Babatimehin, O. (2003). Social Perspective of Poverty in Nigeria. *Journal of Social Science*, 27(2), 95 – 109.
- Omelawa, (1981). *Adult Education Practice in Nigeria*. Ibadan: Heinemann Education Books Nigeria Ltd, Ibadan: Nigeria.
- Omolewa, M. A. (2001). *The Challenges of Education in Nigeria*: Ibadan University Press, Ibadan, Nigeria.
- Osuji, E. E (2001). *Poverty, Democratization: Challenges for Political Education*. Ibadan University Press, Ibadan: Nigeria.
- Paiko, (2012). *A handbook for Adult ad Non-formal Education Practioners*. Second Edition. Tunard Integrated Services Limited.
- Paul, E. O. (2005). *Entrepreneurship in Vocational Education*. B. O. Anioke, G. A. G, Okwuolisa, & Eheli A. (Eds). Ozebel Publishing, Enugu, Nigeria.
- UNDP Assisted Agency for Mass Education (1991). *Proceedings of the Workshop on Records and Data Management in Mass Education Global Projects*, 13-15 February, Sokoto, Nigeria.
- Zamira, H. D., Linda, H. (2020). Impact of Covid-19 on Education and Well-being of Teachers, Parents and Students: Challenges related to remote (online) learning and opportunities for advancing the quality of education. <https://www.researchgate.net>

EVALUATING FEMALE ENROLLMENT IN TVE UNDERGRADUATE PROGRAMMES OF FCE (T) GUSAU AMIDST NATIONAL CHALLENGES

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Abstract

Education has been considered a defensive tool for national growth and a right to which every child (male and female) must have access to pursue. It indeed become the most potent and valuable instrument for cultural, political and socioeconomic development. This study aimed to evaluate female enrollment in TVE undergraduate programmes of Federal College of Education Technical Gusau amidst National challenges. The researchers formulated two research questions to guide the study and employed a survey research design. The estimated population for this study consists of three hundred and twenty (320) undergraduates and a simple random sampling technique was used in sampling one hundred and seventy five (175) male and female undergraduates in FCET Gusau, Zamfara state. The instrument for data collection was a questionnaire. The data were analyzed using descriptive statistics mean and standard deviation. The finding from this study revealed that cultural beliefs, parent's preference of male over females and socio-cultural factors including peer group influence and lack of parental support, political, religious and communal crises were identified as some of the causes of gender gap in higher education in Northern Nigeria particularly the TVE undergraduate programmes of FCET Gusau, Zamfara state. Based on the findings, conclusion was drawn and it was recommended among other things that giving scholarship to female students, career guidance and counseling, creating and promoting female entrepreneurial skills acquisition in Gusau, employing more females graduates as lecturers were part of the strategies that could be employed towards improving female participation and enrolment in undergraduate programmes of FCET Gusau, Zamfara state.

Keywords: Females Enrolment, Undergraduates, National challenges, Federal College of Education (T) Gusau.

Introduction

Education has been considered a right to which every child (male and female) must have access to acquire because it is the most potent and valuable instrument for cultural, political and socioeconomic development. It is also a normative enterprise that generates issues in the societies particularly on girl child training. According to Abbas, (2019) Education involves acquisition of Technical knowledge and Vocational skills and a defensive tool for national growth and integration. Similarly, Technical Vocational education (TVE) is regarded as an integral part of education that provide means for preparing individuals towards occupational fields and for effective participation in the world of work. Okwelle, (2018) affirmed that TVE involves life-long learning and preparation for responsible citizenship. This form of education according to Okwelle & Okeke, (2017) is perceived as one of the crucial elements in enhancing economic productivity. It was based on these premises that governments committed huge investments to Technical and Vocational Education projects and programme in order to realize its intended benefits.

Notwithstanding improved access to education by females' participation and enrolment in higher education in most developing countries are still characterized by disparities. According to Abudulahi, (2018) there has been gender disparity against females. Females have less access (opportunities) to education in Nigeria as compared to males. Females in the context of this study denote girls and women. As observed by Aina, (2016) in Okeke, (2017) fewer girls enroll and complete their education than boys especially in the Northwest region of Nigeria.

Meanwhile, gender equality in education as observed by Igbinedion and Ojeaga (2018) is inclusive in the global trends of Sustainable Development goals (SDGs, 2030) and a veritable means for economic diversification. Also, Okebukola, aligning with the views of Igbinedion & Ojeaga (2018) opined that equal opportunities and access to education was also part of the recommendations of UNESCO in 2001. They affirmed that technical and vocational education (TVE) was considered a comprehensive term referring to those aspects of the educational process involving in addition to general education, the study of technologies, related sciences, and the acquisition of practical skills, attitudes understanding and knowledge relating to occupations in various sectors of economic and social life.

Furthermore, Aina (2016) in Okeke (2018) revealed that since the introduction of Technical and Vocational Education in Nigeria educational system some years ago, female enrolment and participation in technical and vocational education has remained low. The Federal College of Education (Technical) Gusau, Zamfara State was established by Decree No. 4 March, 1986. The FCET Gusau, Zamfara State has been successfully awarding Nigeria Certificate in Education (NCE) in various courses. It thereafter, progressed academically to run undergraduate programmes after gained successful accreditation from the National Universities Commission (NUC). It Directorate of Undergraduate Studies (DUS) was affiliated to two Universities (Ahmadu Ballo University Zaria and Federal University of Technology Minna) since 2014\2015 academic session.

Consequently, it offers Degree programmes in Sciences, Technical and Vocational Education among others disciplines. Olaitan, (1992) in Yakubu, (2018) reported that the total enrolment figure into Technical and Vocational Education programmes in Nigeria as at year 2017 was less than three percent (3%) in comparison with the countries target of about fifty percent (50%) enrolment in technical and vocational education.

In the meantime, the Federal Government wants technical and vocational education to occupy a prominent position in our institutions. Unfortunately, some Nigerian elites, parents or guardians pay little or no attention to technical and vocational education, teachers and students equally seem not to understand what it is all about and eventually develop some contempt and aversion for technical and vocational courses or subjects (Ozioma, 2017).

It is obvious that the misconception about technical and vocational education is influencing many students to choose other disciplines in undergraduate programmes. Similarly, many careers and trades in technical education were regarded as ignoble and unsatisfactory (Ozioma, 2017). For example, an average Nigerian parent does not want their son or daughter to earn a living as a full time craftsman in trades like Plumber, Block layer, Furniture maker and Auto mechanic. She again affirmed that the perceptions of many Nigerians about vocational careers were that these trades are for the poor and underprivileged individual. Accordingly, Igbinedion and Ojeaga (2018) observed some factors affecting enrolment and participation of females in technical and vocational education programmes to include poor

societal perception, lack of recognition and discrimination against graduates of technical vocational education (TVE). It was on these bases that Ediagbonya, Agbaje & Suberu (2018) posited inadequacies of facilities/infrastructural materials and lack of career counselors have equally not helped out in boosting participation and enrolment of female in technical and vocational education programmes.

Furthermore, observation by Olaitan, (1992) cited in Yakubu, (2018) was that some major factors affecting female enrolment and participation in technical and vocational education include among others; low societal estimation of technical and vocational education as education for low class people, education for last resort and for people of low intelligent quotient (IQ), low achievers and low status occupation as well as lack of career guidance or awareness about technical and vocational education. Indeed, the enrolment of female students in Vocational and Technical Education in FCET Gusau Directorate of undergraduate studies over the years is not encouraging. Many factors were identified as the determinants responsible for the declining of students' enrolment in undergraduate programmes of FCET Gusau, Zamfara state. For example, Ayonmike, (2017) attributed politics, religious and communal crises, lack of career guidance and counseling, perception of students and lack of students interest, parental influence and early marriage as some of the major factors responsible for gender gap in enrolment at TVE undergraduate programmes in Northern Nigeria..

Subsequently, Oranu, (2013) cited in Muhammad, (2018) examined students' interest, prestige, student to students' interaction and teachers' influence as factors influencing career choice in tertiary institutions of learning. Similarly, Abdullahi, (2017) asserts that adolescent occupational choice is influenced by many factors, including life context, personal aptitudes, sociocultural background and educational attainment. In addition, Ozioma, (2017) affirmed that Home economics as a vocational subject is required to equip the learner with the knowledge of skill and attitude necessary for threw effective management of the home, it requires skills, wisdom, dedication, care, intelligence, unusual patience and very strong power of observation and imagination. Therefore, a student that has these qualities should study vocational/technical subjects especially Home economics but the reverse is the case.

Statement of the Problem

The participation of female in vocational and technical education programmes in Nigeria institutions as observed by Olaitan, (1992) in Yakubu, (2018) is very poor when compared to enrollment in Art and Social sciences. Despite successive governments' efforts directed at improving Technical and Vocational Education at all levels to make vocational and technical education attractive and sellable, gender gap still exist in undergraduate programmes. Studies revealed that, academic activities in the Northern Nigeria are facing high security challenges. Many schools were closed prior normal academic calendar due to high rate of insecurity, political, religious and communal crises among other issues. This situation has assumed a precarious dimension in some tertiary institutions in the Northwest zone. A typical example is the Federal College of Education (Technical) Gusau, Zamfara State. The parents, academic institutions and government at all levels were concerned about this setback. Therefore, this study is set out to evaluate female enrollment in undergraduate programmes of FCET Gusau amidst national challenges.

Objectives of the Study:

The objectives of this study were to:

- i. Identify the challenges affecting female enrolment in TVE undergraduate programmes of FCET Gusau amidst national challenges.
- ii. Identify the strategies to be adopted towards improving females' enrolment in TVE undergraduate programmes of FCET Gusau amidst national challenges.

Research Questions;

The following research questions were formulated to guide the study;

- i. What are the challenges affecting female enrolment in TVE undergraduate programmes of FCET Gusau, amidst national challenges?
- ii. What are strategies to be adopted towards improving females' enrolment in TVE undergraduate programmes of FCET Gusau, amidst national challenges?

Methodology

The study adopted a survey research design to evaluate female enrollment in TVE undergraduate programmes of FCET Gusau amidst national challenges. The estimated population for this study comprises three hundred and twenty (320) male & female TVE undergraduates. The area of the study is Federal College of Education (Technical) Gusau, Zamfara State. The researchers used simple random sampling technique in sampling one hundred and seventy five (175) male and female TVE undergraduates for this study.

The instrument for data collection was a questionnaire titled "Evaluating female enrollment in undergraduate programmes of FCET Gusau amidst national challenges. The questionnaire was designed on five point likert scale of Strongly Agree (SA), Agree (A), Undecided (U) Strongly Disagree (SD), and Disagree (D) with a corresponding weight of 5, 4, 3, 2, and 1 respectively.

The research instrument was validated by three senior lecturers from the School of Education FCET Gusau, Zamfara State. Some modifications were made based on their observations before pilot or trial testing. The purpose of validating research instrument in this study is to ascertain how well the instrument measures what is intended to be measured. To ensure reliability of research instrument, a pilot or trial testing was used. The purpose of the pilot or trial testing in this study is to check for ambiguity, confusion, and poorly prepared questionnaire items. Indeed, pilot test feedback can be useful for confirming the instrument. A pilot testing or study was used to check vital aspects of instrument in the term of length, time required to complete the tool along for finding out whether the number of items are apt, as well as the ease or difficulty in completing the questionnaire (Ozioma, 2017).

The questionnaire were personally administered to the respondents with two (2) colleagues as research assistants, who had short training on how to distribute and retrieve data from the respondents. The researcher used 175 copies of questionnaire to elicit responses. Respondents were asked to respond to each items by selecting only one option from a five (5) point likert-type scale of Strongly Agree [5], Agree [4], Undecided [3], Disagree [2], and Strongly Disagree [1], respectively. Finally, the questionnaire was retrieved from respondents after duly completed. However, out of 175 questionnaires distributed, only 170 questionnaires representing (97.2%) were retrieved. The remaining (2.8) were mortality rate.

Scoring Procedure

The data collected was analyzed using descriptive statistics in from the frequency count, simple percentage mean and standard deviation for the research questions. The five (5) point likert-type scale was used in answering all the research questions. Therefore, any mean value of 2.50 and above was considered accepted while, less than the value of 2.50 was considered rejected.

Results and discussion

Research Question 1:

What are the challenges affecting female enrolment in TVE undergraduate programmes of FCET Gusau amidst national challenges?

Table 1: Mean responses of the respondents on the challenges affecting female enrolment in undergraduate programmes in of FCET Gusau amidst national challenges

S/N	Restraints	X	S.D	Remarks
1	Lack of appropriate vocational or career guidance and counseling.	3.36	0.66	Agreed
2	Peer group influence to follow the status quo such as early marriage.	3.63	0.53	Agreed
3	Lack of female lecturers.	3.37	0.59	Agreed
4	Situational challenges such as lack of parental support	3.28	0.75	Agreed
5	Security challenges in student's communities.	3.34	0.64	Agreed
6	Parental perceptions of cost/benefits of educating girls.	2.98	0.90	Agreed
7	Absence of female role models.	2.92	0.90	Agreed
8	Poor training and retraining programme for vocational technical education teachers and instructors.	3.37	0.75	Agreed
9	Socio-cultural background and religious beliefs	2.70	0.82	Agreed

Source: Authors field Survey; 2020

Grand mean = 3.35

Data presented in Table 1 shows that the respondents agreed on all the items as challenges affecting female enrolment in undergraduate programmes in of FCET Gusau in the midst of national challenges. The mean values range from 2.70 - 3.37, standard deviation of 0.59 – 0.97 and grand mean 3.35 respectively. This is in line with the observations of Ayonmike (2010), Igbinedion and Ojeaga (2018) that some of the constraints against female active participation and enrolment in technical education were poverty, cultural beliefs and parent's preference of male over females.

Also, the study agree with Maluwa-Banda and Kholowa (2009) as cited (in Afu, Gbobo, Ukofia & Itakure, 2017) reports that socio-cultural factors including peer group influence, lack of parental support, political, religious and communal crises among others. They affirmed that gender gap in undergraduate programmes in Northern Nigeria particularly in FCET Gusau, Zamfara state could be as a result of socio-cultural background, insecurity and religious beliefs. These were among other constraints that had giving females limited educational opportunities in the Northwest geo-political zone.

Research question 2:

What are the strategies to be adopted to be adopted towards improving females' enrolment in undergraduate programmes of FCET Gusau amidst national challenges?

Table 2: Mean responses of the respondents on strategies for improving Female Enrolment in Technical Vocational Education programme of FCET Gusau amidst national challenges.

S/N	Restraints	X	S.D	Remarks
1	Career guidance and counseling on technical and vocation programme be provided to all female students	2.92	0.90	Agreed
2	Effective scholarship intervention to females who secure undergraduate admission.	2.89	0.97	Agreed
3	Employment of female trainers from other state to serve as role model.	3.34	0.64	Agreed
4	Advocacy by government and policy makers for implementation of females oriented technical vocational programmes.	3.37	0.75	Agreed
5	Establishment of female formal and non-formal skills acquisition centers.	3.36	0.66	Agreed
6	Creating conducive environment for practicing female entrepreneurs to transact their businesses.	3.47	0.59	Agreed
7	Promoting synergy between girls education and poverty alleviation programme	3.28	0.70	Agreed

Source: Authors field Survey; 2020

Grand mean = 3.23

Data presented in Table 2 shows that the respondents agreed on all the items as strategies to be adopted towards improving females' enrolment in undergraduate programmes of FCET Gusau amidst national challenges. The mean values range from 2.89-3.47 and standard deviation of 0.59–0.97, and grand mean 3.35 respectively. This indicates that the respondents were close together in their responses.

The result shows that giving scholarship to female students, employing more females as students after graduation, Career guidance and counseling. Creating and promoting female entrepreneurial skills acquisition in Gusau, were among the strategies that could be employed towards improving female participation and enrolment in undergraduate programmes of FCET Gusau amidst national challenges.

Discussion

In Table 1, it was found that there are challenges affecting female enrolment in undergraduate programmes of FCET Gusau amidst national challenges. Some of these constraints include; parental influence, absence of female role models, insecurity, peer group influence to follow the status quo such as early marriage, among other issues. The findings of this study were similar to the observations of United Nations Children Education Fund (UNICEF) (2018) that female in TVE can only be enhanced through tackling all these challenges. The findings presented in Table 2 shows the strategies to be adopted towards improving females' enrolment in undergraduate programmes of FCET Gusau amidst national challenges.

The respondents agreed with all the strategies identified. This is in line with Ozioma, (2017) that raising national awareness on importance of girl child education and proactive efforts by government and stakeholders are needed towards improving female enrolment FCET Gusau, Zamfara state.

Conclusion

Based on the findings of this study, it was concluded that cultural beliefs, parent's preference of male over females and socio-cultural factors including peer group influence and lack of parental support, political, religious and communal crises were identified as some of the causes of gender gap in higher education in Northern Nigeria particularly the TVE undergraduate programmes of FCET Gusau, Zamfara state.

Implications of the study

This study will have implications on the following agencies and individuals. The Federal Ministry of Education (FME), the National Commission for Colleges of Education (NCCE), the policy makers etc. The findings of this study will become strong evidence to the FME, NCCE, and legislatures towards realizing the causes of gender gap in higher education in Northern Nigeria particularly the TVE undergraduate programmes of FCET Gusau, Zamfara state.

It will therefore, motivate and encourage Federal Government, Non-Governmental organizations and other stockholders to explore strategies aimed at improving and bridging gender gap in enrolment at higher education in Northern Nigeria particularly the TVE undergraduate programmes of FCET Gusau, Zamfara state.

Recommendations

The following recommendations were made based on the finding of the study:

1. Federal government through Tertiary Education Trust Fund should support female students with study allowance.
2. Non-governmental organizations and the Zamfara State governments should be encouraged to provide study allowance and free accommodation for Female students in FCET Gusau, Zamfara state.
3. Other academic opportunities such as access to admission, employment and appointments of Female graduate should be encouraged.
4. Federal and State Government should as a matter of urgency organized conferences, seminars and sensitization workshops of stakeholders in education and women leaders to address the conspicuous gap existing between males and females in Technical and Vocational Education (TVE) and chart the way forward.

REFERENCES

- Abbas, B.Z. (2017), New approaches technical and vocational education. *Paper presented at ETF Zonal Sanitization Workshops on the Importance of Technical and Vocational Education in Nigeria Held February 9th, 2017 at Port Harcourt.*
- Abudulahi, E.N. (2017). Technical vocational education and training (TVET) in Nigeria: Issues and suggestions for productivity and sustainable national development. *International Journal of Research in Education*, 10(1), 30-49.
- Aina, O. (2016) cited in Okeke, B.C. (2018), *Technical and vocational education (TVET) in Nigeria: The way forward.* Paper Presented at ETF Zonal Sanitization Workshops on the Importance of Technical and Vocational Education in Nigeria.
- Amaewhule, W. (2016). An introduction to vocational education and administration. Ibadan, Nigeria: Spring Field Publishers. *Journal of Education and Human Development*, Vol. 3(3),45-57
- Ayomike, E.U. (2017). *Developing Research Skills: Concept and Conceptual Framework.* Nsukka: Great AP Express Publishers Ltd.
- Ayonmike, E.U (2010), Igbinedion, D.S and Ojeaga, Y.G (2018), Vocational technical education in Nigeria: Challenges and the way forward. *Unizik Orient Journal of Education*, 2(1), 180-119.
- Ayonmike, C.S. (2018). Demographic challenges and female participation in technical education. *Journal of Technical Technology and Vocational Educators (JOTTAVE)* 1(1):25-35.
- Ediagbonya, K, Agbaje, M. & Suberu, A. K. (2018). *Analysis of factors influencing business education students' enrolment pattern in N.C.E. programme in Federal college of education,*
- FRN (2004). *National policy on education.* (Revised Edition). Lagos: NERDC Press.
- Igbinedion, V.I. & Ojeaga, I.I. (2018). Use of career education and occupation information services in boosting enrollment into vocational and technical education programmes in Nigeria. *International Education Studies*. 5(4). 59-73
- Maluwa-Banda and Kholowa (2009) as cited (in Afu, Y.S Gbobo, N.E Ukofia & Itakure, D.A (2017), Relevance of entrepreneurship in technical, vocational education and training for sustainable national transformation. *Unizik Orient Journal of Education* 7 (1) 113-119
- Okebukola, P. and Okeke, T (2018) *Education, human security and entrepreneurship.* 7th Convocation Lecture of Delta State University, Abraka. University Printing Press.
- Okwelle, P.C. (2018). Strategies for improving enrolment into technical teacher education programmes through students' involvement in public relations activities. *Niger Delta Journal of Education*. 2(1&2), 57-63.

- Okwelle, P.C. (2018). Effective students involvement in public relations: A strategy for Improving enrolment into technical teachers education programme. *Journal of National Association of Teachers of Technology*, 7(3), 13-28.
- Okwelle, P.C and Okeke, B.C. (2018). Enhancing enrollment in vocational programmes in colleges of education in Delta State: perception of academic staff. *International Journal of Educational Research and Development*. 1 (1). 60-74
- Olaitan, S. O. (1992), cited in Yakubu, (2018), Mechanisms for improving manpower production in vocational technical education in Nigeria. In E, U Anyakoha and R.N Oranu (Eds.) Vocational technical education and manpower development Nsukka: *Nigerian Vocational Association Publication*.
- Oranu, R.N (2013) cited in Muhammad (2018),. *Vocational and technical education in Nigeria*. In R.P.S. Pillai (Ed) Strategies for producing new curriculum in West African. Geneva: UNESCO International Bureau of Education. Retrieved 11th march, 2013 from <http://www.ibe.unesco.org/curriculum/Africa.pdf>.
- Ozioma, C.A. (2017). Influential factors affecting the attitude of students towards vocational and technical subjects in secondary schools in Northwest and Eastern Nigeria. *Journal of Educational and Social Research*. 1(2) 58-60
- Krejcie and Morgan (1970) cited in Ahmad (2018), Training teachers for the new 9-3-4. Education system in Nigerian: its Problems and Prospects. *International NGO Journal* 4(4). Retrieved 11th March, 2017 from <http://www.academicjournals.org/NGO>.
- UNICEF. (1993). Studying forms of transition: methodological innovation in a cross-national study of youth transition and labour market entry. *Comparative Education* 30.
- UNESCO & ILO (2002). Technical and vocational education and training for the twenty-first century. Retrieved 11 th March, 2013 from <http://www.google.com.ng>
- UNESCO (1999). Scientific technical and vocational education of girls in Africa: section for science and technology education working document.
- UNESCO (2001). Revised Recommendations Concerning Technical and Vocational Education. Retrieved July 24, 2012 from <http://www.google.com.ng> *Journal of Education and Human Development*, Vol. 3(3), September 2014.
- UNESCO (2002). Technical and vocational education and training for the twenty-first century. Geneva UNESCO & ILO.
- UNESCO, (2006), “How Many Children in Africa Reach Secondary Education?” <http://www.uis.unesco.org/TEMPLATE/pdf/EducGeneral/UIS>.
- UNESCO (2006). Orienting technical and vocational education and training for sustainable development: A discussion paper. http://www.unevoc.unesco.org/fileadmin/user_upload/pubs/SD_DiscussionPaper_e.pdf

INFLUENCE OF SCIENTIFIC ATTRIBUTES ON MATHEMATICS ACADEMIC PERFORMANCE AMONG STUDENTS OF JUNIOR TECHNICAL COLLEGES IN KANO STATE, NIGERIA

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Abstract

The study investigates the Influence of Scientific Attributes on Students Mathematics Academic Performance in Junior Technical Colleges in Kano State, Nigeria. A population of 3,790 and 120 sampled Junior Technical College (JTC2) and (JTC3) students was selected using stratified and simple random sampling techniques. Ex-post factor research design was adopted on Students' response to Inventory Of Scientific Attributes (IOSA) Questionnaire and their Promotional Examination results, they were used to assess their attributes and academic performance respectively. Data were analyzed through descriptive statistics; mean, Standard Deviation, Pearson Product Moment Correlation Coefficient and t-test. The results revealed the mean score and Standard Deviation respectively as 25.8 and 1.82 for JTC2, 24.6 and 1.71 for JTC3 students; Open-mindedness. 23.4 and 1.58 for JTC2, 20.7 and 1.43 for JTC3 students; Curiosity. 20.1 and 1.67 for JTC2, 19.3 and 2.10 for JTC3; Rationality. Finally 14.8 and 2.01 for JTC2, 16.9 and 1.57 for JTC3; Aversion to superstitious believes. Comparing the mean score of students' scientific attributes, students' readiness to learning mathematical concepts was based on their desire or eagerness for new ideas to readily initiate on their sound knowledge and dislike to superstitious beliefs. $r_{cal} = 0.61 > r_{cri} = 0.17$, and $t_{cal} = 2.31 > t_{cri} = 1.96$ ($df=60$), at $P=0.11 > P=0.05$ alpha level significance, hence students' Mathematics Academic Performance in Junior Technical Colleges Kano, Nigeria were influenced by their Scientific Attributes. No significant difference between Scientific Attributes of male and female students was observed. It is recommended that; Science and Mathematics teachers should be made to know the existence and influence of Students Scientific Attributes, apply discovery method in teaching mathematics and the use of concrete and improvised materials to develop students' curiosity.

Keywords: Brain-Stormy, Technical Colleges, Inventory of Scientific Attribute, Students Academic Performance and Ex-Post-Factor, Kano State.

Introduction

Mathematics is a subject that has a wide range of utility in the society. It is made a core subject hence the bed-rock of science and technology, it is taught at all levels of education. It is a weapon needed for any nation that intends to develop Economically, Scientifically, and technologically, (Malik and Salman 2016).

Basic education not only in Nigeria but in every nation serves as the foundation upon which quality is build and maintain across other levels of education. Abba (2016) affirmed that

teaching should encompass both instruction and procedure, a process to guide students to engage in thinking about concepts they construct in mind. Developing students' scientific attributes in the study of mathematics surely improve their interest on the subject since Federal Republic of Nigeria (2013) emphasized the need for the introduction of more practical approach in Science and Mathematics in order to encourage Mathematical and Scientific thinking and its application among students to be able to cope with the demands for Scientific and Technological as well as human development in Nigeria. The United Nation Development Program report 2015 on human development, World Economic Forum 2016 report posit that "A nation's human capital endowment; the knowledge and skills embodied in individuals that enable them to create economic value can be a more important determinant of its long term success than virtually any other resource".

Gender difference seems to be one of the factors responsible for the challenges in educational and sustainable development in Nigeria, but research findings has proved being a male or female does not depend on the quality of brain (superior or inferior) that one possess. The reports in gender towards Mathematics influence some researchers to study some affective variables as mediators of gender differences in Mathematics achievement. (Casey et al 2013). Developing female students' scientific attributes for academic performance may be when equal opportunities were given on gender issue.

Scientific attribute is defined as an opinion or action tender with respect to psychological events in the field of science; it refers to as the sum of preconceived ideas, fears, inclinations and feelings, prejudices or biasness, threat or topic in science. To be a scientist means one has such attributes as rationality, curiosity, objectivity, criticaster mindedness, honesty. The influence of scientific attributes on academic achievement in science and mathematics; it motivates learner, stands a better chance of learning science and mathematics as students develop computational skills, creativity and self-actualization.

Objectives:

This study aimed at;

1. Identifying the Scientific Attributes of students in Junior Technical Colleges in Kano state, Nigeria.
2. Finding the relationship between students' Scientific Attributes and their Mathematics academic performance at Junior Secondary School level.
3. Finding the relationship between the Scientific Attributes of JTC2 and JTC3 male and female students.

Hypotheses:

The following null hypotheses were formulated to guide the study;

H₀₁ : There is no significant mean difference in the Scientific Attributes of JTC2 and JTC3 students' in Junior Technical Colleges in Kano State, Nigeria.

H₀₂ : There is no significant relationship between the Scientific Attributes of students' and their Mathematics academic Performance in Junior Technical Colleges in Kano State, Nigeria.

H₀₃ : There is no significant difference between the Scientific Attributes of male and female students' of Junior Technical Colleges in Kano State, Nigeria.

Methodology

The population of the study comprises 3,790 and a sample of 120 students of Junior Technical Colleges in Kano State, the samples were selected using stratified and simple

random sampling techniques. The schools involved were MTGSTC Kano 33(27.5%), GTC Kano 41(34.2%), GTC Sani Abacha 27(22.5%) and New GSTC Kano 19(15.8%). Students of JTC2 and JTC3 were used in the study.

The researchers adopts Ex-Post-Factor research design in which students' responses to Inventory Of Scientific Attributes (questionnaire) for identification of Scientific attributes of students and their promotional examination results for their academic performance. The instrument adapted was constructed by Emina (1996) in Jesulowo (2012) called Inventory of Scientific Attributes (IOSA) consist of 24 items categorizes into;

- i.) Rationality; The state of having good sense and sound judgment; 5-items
- ii.) Curiosity; Desire or eagerness to know more and be able to initiate; 4-items
- iii.) Open-mindedness/Objectivity; Judgment un-influenced by emotions; 7 items
- iv.) Aversion to superstition; Feeling of intense dislike to laws of nature and faith in magic with 4-items

The questionnaire was distributed to the sample population, the purpose of the research was clearly explained to the respondents before completion and it was collected with the help of their mathematics teachers. Promotional examination results were also collected from their examination officers. The data were analyzed in relation to the scientific attributes, academic performance and gender using mean, Standard Deviation, Pearson Product Moment Correlation Coefficient and t-test at 0.05 alpha level of significance in line with the formulated null hypotheses formulated.

Results

Common Promotional examination questions set by experts from various schools under Science and Technical Schools Board were used and the questionnaire was validated before it was administered to the sample of the study. Data was analyzed based on the formulated hypotheses as thus;

H₀₁: There is no significant mean difference in the scientific attributes of students' in Junior Technical Colleges in Kano State, Nigeria.

Table 1: Summary of Mean and Standard Deviation of JTC2 and JTC3 Students' Scientific Attributes

Scientific Attribute	Class	Mean	S.D	P	Sig.
Rationality	JSS2	20.1	1.67	0.05	N.S
	JSS3	19.3	2.10	0.21	
Curiosity	JSS2	23.4	1.53	0.15	
	JSS3	20.7	1.43	0.75	
Open-mindedness/ Objectivity	JSS2	25.8	1.82	0.47	
	JSS3	24.6	1.71	0.02	
Aversion to Superstition	JSS2	14.8	2.01	0.13	
	JSS3	16.9	1.57	0.18	

The result shows that open-mindedness/objectivity had the highest mean score of 25.8, Standard Deviation 1.82 for JTC2 and 24.6, Standard Deviation 1.71 for JTC3, followed by curiosity with 23.4, Standard Deviation 1.53 for JTC2 and 20.7, Standard Deviation 1.43 for

JTC3 then rationality with 20.1, Standard Deviation 1.67 for JTC2 and 19.3, Standard Deviation 2.10 for JTC3, finally aversion to superstition with the least score 14.8, Standard Deviation 2.01 for JTC2 and 16.9, Standard Deviation 1.57 for JTC3 at 0.05 alpha level of significance. The null hypothesis H_{01} is accepted and concludes that there is no significant mean difference in the scientific attributes of students' in Junior Technical Colleges in Kano State, Nigeria.

H_{02} : There is no significant relationship between the scientific attributes of students and their Mathematics Academic Performance in Junior Technical Colleges in Kano State, Nigeria.

Table 2: Correlation of JTC2 and JTC3 Students Scientific Attributes and Academic Performance

Variables	Number of Students	Mean	S.D	r-cal	r-cri	P
Remark						
Scientific Attributes	120	40.7	1.47	0.61	0.17	0.02
Sig. Academic Performance	120	41.3	1.52			

Comparing the two r-values in Table 2, $r_{cal} = 0.61 > r_{cri} = 0.17$ at 0.02 alpha level of significance, the null hypothesis H_{02} was rejected and concluded that there is significant relationship between scientific attributes of students and their Mathematics academic performance in Junior Technical Colleges in Kano State, Nigeria.

H_{03} : There is no significant difference between the scientific attributes of male and female students of Junior Technical Colleges in Kano State, Nigeria.

Table 3: Independent t-test statistics between Male and Female

Group		Number of Students	Mean	S.D	t-cal	t-cri	df	P
S								
Male	JSS2	30	49.7	3.4	2.31	1.96	60	0.11
	JSS3	32	43.5	3.7				
					2.03		56	0.09
Female	JSS2	28	50.2	2.7				
	JSS3	30	47.5	2.9				

The value $t_{cal} = 2.31 > t_{cri} = 1.96$ ($df = 60$) was obtained at $P=0.11$ alpha level of significance greater than $P=0.05$, the null hypothesis H_{03} is accepted and concluded that there is no significant difference between scientific attributes of male and female students in Junior Technical Colleges in Kano State, Nigeria.

Discussion

The overall observation made by the researchers for the mean scores of the students' scientific attributes; open-mindedness with highest score followed by curiosity then rationality and finally aversion to superstitious beliefs, contrary to the result of research conducted by Jesulowo (2012). Students' readiness to learning mathematical concepts applying their curiosity will add to their good sense and sound knowledge or awareness as against their superstitious beliefs which could later help them in their Junior Technical Certificate Examinations, this support Ukor (2014). Consequently, students readiness to learning Mathematical concepts, ideas based on their desire or eagerness for additional information to knowledge of the subject readily initiate a child more on his/her good sense and sound knowledge/judgment or awareness of fallibility of his effort, lastly feeling intense dislike to laws of superstitions, preference of Mathematical explanations. Traditional beliefs do not persist, but lack of proper or adequate background knowledge of Mathematics right from primary school, hence making students not to obtain higher score. No significant difference in the male and female mean score of scientific attributes.

Conclusion

In this study, Junior Technical College Students displayed their scientific attributes; the students' scientific attributes were significantly related to their Mathematics Academic performance, no significant difference of male and female students' mean score of scientific attributes were noticed. Developing students' scientific attributes is necessary in the study of Science and Mathematics this is because among the importance of scientific attributes; it help students to carefully and accurately record observations/findings, it help acquire sound knowledge, promotes self-confidence and self-reliance makes learning permanent, it allow children feel, possess scientific skills which could leads to better performance in Science and Mathematics.

Recommendations

Based on the findings of this study, the following recommendations were made;

- Science and Mathematics Teachers should be made to know the existence and the positive influence of students' scientific attributes.
- Science and Mathematics Teachers should sometimes apply Guided discovery method of teaching to help in developing students' scientific attributes.
- Government should create and equip Science and Mathematics laboratories in our schools to motivate teachers and students in their studies.
- Teachers should make good use of the Science and Mathematics laboratories, utilizes the materials provided and the once not available they should use concrete objects or improvise using local materials.

REFERENCES

- Abba, R. (2016). Revitalizing Basic Education in Northern Nigeria through teaching methods; The way forward. Unpublished paper presented at the 3rd Annual Conference organized by Faculty of Education and extension services Usman Danfodio University, Sokoto.
- Jesulowo, J. J (2012). Relationship between Scientific Attributes and Academic Performance Among Demonstration Secondary School Students (JSS) ABU Zaria, Post Graduate Seminar Series Publication, Department of Science Education, ABU Zaria, 1 (1), 319 -324.
- Malik, N. A (2016). Effect of bridge II mobile application on Middle Basic School Pupils' Performance in Mathematics in Lagos State. *Journal of Mathematical Association in Nigeria*. 38(1) 152 – 162.
- Mari, S. J (2010). Comparism of Academic Performance of Undergraduates Biology students Admitted into University with different entry qualification. *Journal of Studies in Science and Mathematics Education*, 1 1(1) 24.
- United Nation Development Program (2016). Human Development Report 2015; Work for Human Development. Briefing Note for Countries on the 2015 Human Development Report, Nigeria. New York Oxford University Press.
- Obeka, S. S (2010). Effects of inquiry and demonstration methods on students achievement and Retention in some environmental education concepts of Geography. *Journal of studies in Science and Mathematics Education, Faculty of Education, ABU Zaria 1 (1) 52.*
- Ochu, A. N. O and Adegheir, K. F (2010). Gender Imbalance in Secondary School Physics in Vandeikya Local Government Area of Benue State: Implication for Sustainable Development 5 (1) 387 – 396.
- Olorukoba, S. B and Lawal, F. K (2010). Effects of Science – Technology – Society (STS) Approach and Lecture Methods on Academic Achievement and creative trait development Of Junior Secondary School Integrated Science Students. *Journal of Studies in Science and Mathematics Education, ABU Zaria 1 (1) 26 – 36.*
- Ukor, D. D (2014). Evaluation of Integrated Science and Introductory Technology Programs In Secondary Schools in Benue State. *Journal of Research in Curriculum and Teaching*.
- Usman, I. A (2010). The Effects of Indoor and Outdoor Laboratory Instructional Methods on Academic Achievements of Junior Secondary School Integrated Science Students in Zaria Local Government Area of Kaduna State. *Journal of Studies in Science and Mathematics Education, ABU Zaria 1 (1) 66 – 73.*

DIGITAL TECHNOLOGY: A PARADIGM SHIFT IN THE DEVELOPMENT OF TRAVEL AND TOURISM INDUSTRY

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Abstract

Digital technologies have changed the way we travel and how people are living their life today which has become a part of everyone's life as a necessity to live. Technology has brought changes in our travelling pattern and has dependably helped us in our day to day lives. In the field of transport, planes could enable us reach those parts considered as dangerous. Mobile and computer more have changed the way we sell, buy, work and essentially change each part of our lives has ended up being an assistant for our lives and its impact on the travel part is immense. Today, nobody doubt that technology and travel are the perfect combination which has played a crucial role in the way we travel from the vacation destination to what we do once we're there and even after we've come back from our adventure. The changes goes beyond improving the tourist experience; it entails transforming the tourism system itself, in making improvements to customer service, relationships with customers, and the creation of new business models. All this naturally leads to benefits for the traveler, letting them simplify and often enrich, the travel planning process. This paper examined the digital technology paradigm shift in the development of travel and tourism industry. way travel and tourism industry through the technological innovations of internet; Augmented reality, Virtual reality; Big data; 5G; Robotics, Voice control and facial recognition.

Keywords: *Digital Technology, Development, Paradigm, Travel and Tourism*

Introduction

Travel Technology which is also known as tourism technology is an application of ICT (Information and Communication Technology) or IT (Information Technology) in the sector of hospitality, tourism, and travel (Buhalis, 2003). It simply implies locomotion; thus, the travel method was initially connected with the computer reservation system of the airline business, however, at this point, it is generally utilized, in which the travel industry alongside its hospitality industry is furthermore utilized while the computer reservation system is implemented in travel technology. It shows an exceptionally wide range of utilization, in actuality, it incorporates virtually the travel industry as virtual tour technology (Bhatia, 2006). According to Concha (2000), an important step made in travel technology with an ever-increasing number of innovative solutions that could settle the bust of a travel plan with access to 24/7 and quick reaction. These days, couple travelers wants a private tour with carefree experience and comfortable experience, at a point when travel experts do this, they build customer loyalty and is prevalent, that according to a Google Travel study (2020), 74% of travelers plan their trips on the internet, while only 13% still use travel agencies to prepare them Adelson (2000) confirmed that millennial have also played a significant role in this paradigm shift and global distribution system is one of the major developments in the travel sector where a single contact point is used for hotel, care or airlines booking. March (2009) explained that apart from this, the improvement of mobile technology in the travel industry has helped various individuals. The advancement of online business has affected the travel

industry and tourism as clients can see different travel alternatives by surfing the web through their mobile. The continued development of information technology has greatly affected the travel agency industry and the broad public utilization of the Internet has made many situations a game changer both harmful and beneficial ways for the modern travel organization (March, 2009). Therefore, in the 21st century, many travel organizations needed to make an incredible adaptation to stay relevant and solvent, as the flood of development and industrialization has contaminated our environment (Kartz, Kilb and Liebermann, 2001).

Concept of Digital Technology

The term "digital Technology" refers to how we use digital tools to organize, manage and even enjoy the travel experience. It uses all the tools of digital transformation to change how we travel and how the sector itself operates (Greenwald and Thibault 2000). Like other sectors, digital transformation has completely changed and continues to change on how we travel as the internet is now an essential component of the experience that every tourist makes when he or she decides to travel (Jenkins, 2000). From searching to purchasing, from writing reviews to publishing them: at least one of these actions is carried out online by any tourist during their vacation period. According to Liebermann and Katz (2001) travel technology is a broad term, which is used to describe the application of IT, e-commerce and similar technology solutions within the fields of tourism, travel and hospitality. Hotel and tourism technology is intended to assist businesses and their employees improve the travel experience for customers or both (Russo and Shooemaker, 2009).

Technology has become an integral part of our lives, completely changing how we work, shop, eat and spend our leisure time and with a few simple taps on our smartphone, an individual can order food, purchase home appliances, make dinner reservations and much more (Katz, 1992). Constant technological advances have even made their way into the travel industry. One can now book hotel rooms, flights, sightseeing tours, and other activities and plan our entire trips - all from a mobile device (March, 2009). Technology has revolutionized the way we travel, making our travel adventures more convenient and fun as this massive change in the tourism industry is what we now call travel technology and in simplest terms, travel technology means using technology to plan trips. It helps travel agencies book trips for their customers, together with airline tickets, hotel accommodation, car rentals and many other travel-related activities (Katz 1992). Computerized reservation systems (CRSs) provided by hotels and airlines partners handle everything related to travel in a matter of minutes. Every reservation system, store and retrieves real-time data, so each travel agent can streamline communication with all the relevant parties. Travel technology automates bookings, payments and back-office tasks for travel agencies and enables consumers to make their online bookings without a travel agent (Jenkins, 2000). Hotelmize and similar technology-driven companies and startups are helping the tourist industry implement travel technology. According to Kopp (2000), travel technology is the use of IT in the travel, tourism, and hospitality industry as the application of IT and e-commerce solutions in tourism, travel, and hospitality are the goal of automating travel, saving time, reducing costs, and creating a seamless travel experience for consumers before, during and after a trip (Yazid, 2015). Technology has made travel automation possible, making trip planning less time-consuming and exciting for travelers while travel agencies as an individual can plan a trip in minutes and easily book accommodation, tickets, flights, travel itinerary in the palm of your hand, with your mobile device as the perfect travel buddy and stay connected wherever you are, break down language barriers, and even improve your packing routine with technology such as Automated Reality (AR) which has revolutionized tourism and provides a tourist have a personalized experience that makes every trip unforgettable (Bohlsen, 2021).

Innovating Technologies within Travel and Tourism industry

Digital Technology devices refers to electronics tools, system devices and resources that generate, store or process data, example of such devices are Internet; Augmented reality, Virtual reality; Big data; Blockchain; 5G; Robotics and Facial recognition etc (Katz, 1992). With the rise of digital technologies and the adoption by tourists and tourism organization, it helps to transform the process and the value chains in the tourism industry.

□ Internet:

One of the most important and powerful emerging technology trends, which need to be understood and explored, is the Internet which has the potential to fundamentally change how tourism companies operate, improve their revenue management and enhance the customer experience (Banerjee and Chua, 2016). The Internet has brought significant updates to the tourism industry, for example integrating sensors connected to the Internet inside items like cars, suitcases, buildings and more. In fact, Spain's Hotel Technology Institute (InstitutoTecnológico Hotelero, 2018) affirmed that the Virgin Hotel properties offer an app to their clients that let them interact with the room's thermostat or control the television in the room. There are also suitcases that have devices that allow users to use their cell phones to follow where their suitcase is at any time to avoid lost baggage at the airport or other public places. Hospitality and Tourism are among those affected in the use of internet and for some organizations the experience starts before a traveler arrives, begins with the main visit to the site when an individual sees a photo of the area and understands what's in store. In tourism and the hospitality industry, productive utilization of the internet can improve income (ITH, 2018). Social media, Websites, online ordering, blogs, and online advertising used to attract and support customer for choosing his place and business (Banerjee and Chua 2016)..

□ Virtual Reality

Virtual reality technology has taken the world by storm in recent years, with VR headsets becoming a mainstream consumer product and the travel industry, are increasingly realizing and exploring the technology's potential, especially as a marketing tool (Caloghirou, Giotopoulos and Kontolaimou, 2020). Virtual reality technology typically involves the use of a VR headset, which helps a user in a digital environment, through the use of images, sounds and other physical sensations in which the user is essentially placed within a virtual world, which they can move around and, in some cases, interact with in other ways (Alford and Jones, 2020). Businesses operating within the travel industry has been especially quick to adopt virtual reality technology and for good reason, their customers are looking to purchase experiences, rather than products and virtual reality offers an effective way for marketers to give them a taste of what they can expect (Bhatia, 2006). Travel customers usually require lots of information before they book a hotel room, for instance, requires them to read descriptions, view images, look at videos, read customer reviews or seek opinions on social media and through intelligent use of virtual reality this process can be shortened significantly (Bhatia, 2006).

□ Robotic Technology

According to Klein (2009), Robotic Technology is rapidly gaining in popularity within the travel industry and this is partly motivated by changing consumer habits with regards to tourism in general. Increasingly, customers are seeking self-service methods and this makes the automation provided by robots appealing to hotels, travel agents and other businesses. A robot is a machine, which has been designed to automatically perform specific tasks accurately, for example, physical tasks, such as part assembly in a factory, or text or speech related tasks. In terms of appearance, while you may immediately think of a human-like android, in reality robots can take many different forms (Klein, 2009). They can be completely autonomous, or semi-autonomous, operating with some human assistance, ranging from collision detection to speech recognition, as well as artificial intelligence. For

instance Oklobdzija and Popesku (2017), stated that those in the travel industry; Artificial intelligence (AI) is perhaps the most exciting robot-related technology as it can facilitate complex tasks, which have typically required human cognitive function, put simply as AI is the ability for a machine to mimic this kind of cognitive ability and speech recognition, problem solving, learning from human interactions, completely autonomous movement and the demonstration of logic and reasoning which fall within this particular field (Oklobdzija and Popesku, 2017).

□ **Voice control**

Voice control is a technology that allows devices including smartphones, smart home hubs, smart TVs and personal computers to understand human speech and respond to simple voice commands in the appropriate way (Adelson, 2000). In doing so, the devices can be controlled by a user's voice, rather than through traditional control methods, for example, the device can be turned on or off by a voice command (Adelson, 2000). However, some smart hub devices also have the capability of controlling or interacting with other devices. As a result of this, multiple devices can be controlled by voice commands given to the smart hub. Voice control works through a combination of artificial intelligence, internet connectivity and, in some cases, the Internet. The artificial intelligence allows devices to recognize speech patterns, while internet connectivity allows the devices to relay relevant information, in order to answer questions.

□ **5G or Fifth Generation**

Mobile networks have brought many changes in communications and data exchange (Li, Hu and Li, 2020). The technology could provide virtually ubiquitous connectivity all around the world. According to Alford and Jones (2020) 5G technology is believed to provide:

- i. Speed: in which latency time will be significantly reduced.
- ii. Data transmission will be up to ten times faster than with 4G technologies.
- iii. Reduced waiting times: communication time between two devices can be as short as one millisecond;
- iv. Connection density: More devices can be connected per square kilometer; approximately one million, compared to 2,000 for 4G technology;
- v. Energy efficiency: The battery life of the phones increases significantly.

Adelson and Jones (2020), states that in addition to speed, the amount of transferable data and reduced reaction time, will also have a positive impact on artificial intelligence. In turn, the processing of information and the response of machines or applications using this technology will become more efficient and will also enable large-scale deployment of devices in cyberspace/internet, as it provides the opportunity to connect countless devices at the same time and increase the speed of exchanges. In other words, 5G promises to allow all electronic devices to be connected to the network and to be controlled remotely.

□ **Facial Recognition**

Technology is a form of biometric artificial intelligence, which is able to identify an individual, or verify their identity, based on their face alone and typically works by comparing a digital image or video frame to the faces in a database, matching up facial features and/or skin textures (Peng, Xiong and Yang, 2012). To date, facial recognition has been deployed in a range of fields and Facebook uses facial recognition to identify human faces within digital images, while Apple have a system called Face ID, which is used to authenticate the identity of the user, preventing unauthorized access (Peng, Xiong and Yang, 2012). The technology is also used within security services, law enforcement and is also being explored and utilized more often in the travel industry. It can be especially useful here, because tourism companies have to deal with a huge number of travelers and customers, so any technology which can help to speed up processes is extremely beneficial. In addition,

within airports and hotels, security is a key concern and facial recognition can be used to easily identify people, to grant specific people access to places and to keep others out. Moreover, the ability to recognize faces almost instantly can also enhance the customer experience through greater personalization

□ **Bigdata.**

McKinsey Global Institute (2011), the term “Big Data” refers to “datasets whose size is beyond the ability to understand, store, manage and analyze standard data. Theoretically, as technology evolves over time, so does the size of Big Data datasets (Press, 2014). The Big Data scenario is generally summarized in the three V's which represent specific features and following the scientific and technological developments, are enriched with new elements. The core consists of 3 basic elements (Chen et al, 2012; Buchholtz et al., 2014) which according to the existing literature are known as the three (Vs), put simply as

- Velocity which is related to the nature of the data flow and their production speed
- Volume refers to the large size of this data, which requires filtering, compression or Big data is data that contains greater variety, arriving in increasing volumes and with more velocity.
- Variety refers to many types of data that are available, where traditionally; data types were structured and fit neatly in a relational data base.

Recent technological breakthroughs have exponentially reduced the cost of data storage and compute, making it easier and less expensive to store more data than ever before. With an increased volume of big data which is now cheaper and more accessible, one can make more accurate and precise business decisions.

The Role and benefits of Digital Technology in travel and tourism industry

The role digital technology played in the field of travel and tourism industry since last decade has directly helped in decreasing the cost, improve services and enhance operational efficiency and customer experience (Li, Hu and Li, 2020). It can be said that both businessmen and travelers' are benefitting from technology which include enhanced guest service systems, reservations, and improved communication. DT has assisted the travel industry and friendliness ventures with transforming costly human work with specialized work. It helps in decreasing work costs, maintains a strategic distance from client administration issues. DT makes life very comfortable, easy and one can get anything by one click as these changes occur in the travel field. Some of benefits according to Oliviera, Thomas, Baptista and Campos (2016), of DT in travel and tourism industry are:-

□ **Save paper**

In a case that one goes, with the extremely valuable help of innovation, travel can turn into a lot eco-companion. Those days are gone, when there was a need to print boarding passes, airline tickets or hotel reservations. On account of mobile check-ins, online reservations and e-tickets, one don't need to travel with the documents and can save a lot of paper. Aside from this, online reservations and appointments are helping to get tickets.

□ **Saving a lot of time**

These days, innovation is attempting to crush all most of the jobs and functions into a tiny gadget. There is no need of an iPod to tune to music, one simply need an iTunes or Spotify account and can stream music on the go. Furthermore, this also applies for books, as fitting them inside the bag was an extra load over our shoulders. Cobo (e-Reader) or Amazon Kindle saves a huge amount of space in our backpacks.

□ **Surpassing the barriers of luggage**

In the past, there was a need to carry a converter or a phrasebook to the location where we are going to. In today's technological world, all one need is a cell phone and with the help of applications like Translate or Google Translate application gives you a chance to translate

menus or signals progressively utilizing your cell phone's camera. Also, applications like Duolingo enable you to become familiar with another language or to improve an individual one definitely knows, without burning through cash. Numerous flights and hotels groups offer the option of sending messages to their clients ahead of time, either enabling them to text through their own application or to set up information channels like WhatsApp, Messenger or Facebook. However, chatbots as a revolution, are getting to be huge resources for this industry and apart from that, it reduces the burden to carry cash while travelling; also, fewer chances of risk particularly when travelling abroad, where money loss or theft can be a huge cause of the problem, once completely integrated, one doesn't need to worry about CC frauds.

Digital Technology Ontology

The DT ontology provides a way of viewing the world of tourism and it organizes tourism related information and concepts, allowing achieving interoperability through the use of a shared vocabulary and meanings for terms with respect to other terms (Buhalis and Law, 2008). This is a very time consuming task, since it was necessary to find out information about real tourism activities and infrastructures on the Web and feed them into the knowledge base. According to Buhalis and Law (2008), the approach is objective-oriented and should be able to answer four types of questions that can be asked when developing a dynamic package. These questions involve the predicates: What, Where, When and How

When and How, Examples of typical questions are:

- What can a tourist do while staying at the destination?
- Where are the location of the interesting places to see and visit.
- When can the tourist visit a particular place?
- How can the tourist get to its destination to see or do an activity?

Digital Technology: A Paradigm shift in the Development of Travel and Tourism industry

Tourism has closely been connected to the progress of ICTs for over 30 years and the establishment of the Computer Reservation Systems (CRSs) in the 1970s, Global Distribution Systems (GDSs) in the late 1980s and the Internet in the late 1990s have transformed operational and strategically practices (Buhalis and Law, 2008).

Li, Hu and Li., (2020), stated the link between customer and supplier has been shortened, removing intermediaries and customers have the opportunity to directly have access to the offers featured in the tourism industry. Since the 1980s, Information Communication Technologies (ICT) has enabled worldwide tourism industry (Buhalis, 2003). Nowadays, the Internet and ICTs are relevant on all operative, structural, strategic and marketing levels to facilitate global interactions and suppliers, intermediaries and consumers around the world (Buhalis and Law, 2008). At present, it plays an important role in the tourism industry. The effectiveness of different sections of this service industry is being enhanced and improved quickly by ICT. According to World Tourism Organization (1989), in the near future, countries without ICT infrastructures would not be able to keep up with the pace of tourism growth of other countries which have significant roles in ICT infrastructure. Travel and tourism industry has created more than 198 million jobs all around the world and has made Gross National Products (GNP) of many countries in 2002. With reference to World Travel and Tourism Council statistics (WTTC, 2010), travel and tourism which is a fast-growing industry and is considered as the biggest industry in the world, would create 249 million jobs and share 10.6% of GNP in different countries all over the World.

DT has an inevitable impact on different industries and their performances and the tourism industry as the largest and fastest growing industry in the world cannot be excluded from this technology and its huge impacts (Berners-Lee; Headier and Lassila, (2001). DT provides information about tourist attractions in the different destinations before travelling and may improve tourists' satisfaction. According to World Tourism Organization (2019), Iran is among the top five countries having tourism potentials, but has not performed well in promoting its attractions to international tourists via ICT tools yet. Thus, it is concluded that there are essential needs for planning strategies in the field of e-tourism, particularly in e-ticketing, e-reservation, online payment, multi lingual and updated information websites. Tourism has closely been connected to the progress of DT for over 30 years (Buhais and Jun, 2011).

Customers' behavior in e-tourism, for example, in which buying channels that customers like or always use in order to choose their vacation either through the websites, blog, facebook and others. It also assesses what the effective factors of a tourism website are, which causes the selection of the website as a buying channel (Banerjee and Chua, 2016). DT plays an important role as a new method in increasing the demand in tourism industry, which in turn, results in attracting more tourists and generating more income, apart from further developing the tourism industry. Tourism has become the world's largest industry and its growth shows a consistent year to year increase as the World Tourism Organization (2000) , predicts that by 2020 tourist arrivals around the world would increase over 200%. Tourism has become a highly competitive business for tourism destination all over the world while competitive advantage is no longer natural, but increasingly driven by science, information technology and innovation. The Internet is already the primary source of tourist destination information for travelers. About 95 % of Web users use the Internet to gather travel related information and about 93% indicate that they visited tourism Web sites when planning for vacations. The number of people turning to the Internet for vacation and travel planning has increased more than 300% over the last five years. According to Press (2014), Tourism Information Systems (TIS) is a new type of business systems that serve and support tourism and travel organizations, such as airlines, hoteliers, car rental companies, leisure suppliers and travel agencies. One class of these systems relies on travel related information sources, such as Web sites, to create tourism products and services. Such information extracted from these sources can serve as the springboard for a variety of tasks, including dynamic packaging, travel planning, and price comparison. Dynamic packaging can be defined as combining of different travel components, bundled and priced in real time, in response to the request of the consumer or booking agent. The approach to the development of a dynamic packaging platform encompasses the use of the latest information technologies such as semantic Web, Web services and Web process. Dynamic packaging architecture, information dissemination and exchange are the key backbones of the travel industry.

Conclusion

The DT technology has touched almost every aspect of the travel and tourism industry. The DT technology in tourism and hospitality industry has quickened the activity and made the travel process efficient; pleasant and utilizing it to the advantages of innovation, for example, accuracy, speed, and convenience, user-friendly and avoid loss, lack of human contact and lettering size, at that point innovation, can be an extraordinary time and cost saver. The large number of travel and tourism websites being created in developed and developing countries shows the importance of DT in the tourism industry and it also indicates the evolution of tourism in the world. Therefore, in the 21st century, many travel organizations need to make an incredible adaptation of the internet; Augmented reality;

Virtual reality; Bigdata; 5G Technology; robotics and facial recognition to stay relevant and solvent and gives incredible speed reaching customers and products, so as to increase availability and receptiveness in an organization

Recommendations

The tourism system is the key for the future of the tourism industry and is therefore recommended that:

1. There is an essential need for planning strategies in the field of e-tourism such as e-ticketing, e-reservation, online payment, multilingual and updated information websites.
2. More e-services should be provided for tourists who want to travel to the attraction city on the websites while focusing on important factors like time and cost saving and obtaining feedback.
3. There is the need to develop the e-tourism infrastructures in order to keep up with the competitiveness in the future.
4. Tourism authorities should develop the e-tourism infrastructures in order to keep up with the competitiveness of this field to enable the country to benefit from the global benefits of the tourism industry.

REFERENCE

- Alford, P., & Jones, R. (2020). The lone digital tourism entrepreneur: Knowledge acquisition and collaborative transfer. *Tourism Management*, 81, 104139.
- Adelson, E., (2000), The internet athlete; ESPN [on-line]; Available www.ESPN.go.com
- Alford, P., & Jones, R. (2020) The lone digital tourism entrepreneur: Knowledge acquisition and collaborative transfer. *Tourism Management*; 81, 104139.
- Banerjee, S., & Chua, A. Y. (2016) In search of patterns among travelers' hotel ratings in Trip Advisor: *Tourism Management*, 53, 125-131.
- Berners-Lee; Headier J., &Lassila, O. (2001) The Semantic Web, *Scientific American*, 285, (5), 34-43
- Bolhsen, M.; (2021) Trend Investing: A look at Augmented reality and virtual reality and some possible winners: <https://www.seekingalpha.com>: Accessed 27/03/2022
- Buchholtz, S., Bukowski, M., &Sniegocki, A. (2014). Big and open data in Europe: A growth engine or a missed opportunity. Warsaw Institute for Economic Studies Report Commissioned by demosEUROPA, 10, 116.
- Bhatia, A.K. (2006). *The Business of Tourism Concepts and Strategies: Staring Publishers private limited A-59, Okwa Industrial Area, Phase II, New Delhi 110020.*
- Buhalis, D. (2003), *eTourism: information technology for strategic tourism management; England' Prentice Hall.*
- Buhalis, D., and Law, R., (2008) Progress in IT and Tourism Management 20 years on and 10 years after the internet, the state of eTourism research; *Tourism Management* 29(4) 609-623 <http://doi.org/10.1016/j.tourism.01.005>.
- Buhalis, D., and Jun, S.H.; (2011) *E- tourism boumemouth University; UK*
- Caloghirou, Y., Giotopoulos, I., &Kontolaimou, A. (2020) inside the black box of high-growth firms in a crisis-hit economy: corporate strategy, employee human capital and R&D capabilities. *International Entrepreneurship and Management Journal*, 1-27.
- Chen, H., Chiang, R. H., & Storey, V. C. (2012) Business intelligence and analytics: From big data to big impact. *MIS quarterly*, 1165-1188.
- Concha, J.; (2000) Technology gives Lakers a leg up. MSNBC (on-line; Available: www.msnbc.com/news/500866).
- Greenwald, T. &Thibault, J. (2000) Interactive New Technology for: [Videotape]. In L. Katz (chair), Symposium Conducted at the Sport Technology Research Laboratory, University of Calgary, Calgary Canada.
- Google Travel Study (2020) Travel in 2020 Trends <http://www.thinkwithgoogle.com> Accessed 2022/03/25

- Instituto Tecnológico Hotelero ITH (2018) Innovación Para El Sector Hotelero Y Turístico; <https://www.ithotelero.com>; Accessed 2022/03/25
- Jenkins, C.; (2000) Website get right to heart during Johnson's relay run USA Today Arlington, VA.
- Kartz, L. Kilb B., & Liebermann, D. (2001) Interaction Volleyball [CD-ROM]; Calgary, Canada: Savvy Knowledge Systems Corporation.
- Katz, L.; (1992) The role of interactive Video, Multimedia and Teaching Technology in Physical Education: Towards the year 2000. In Tenenbaum, G.; Raz-liebberrmann and Artzi, Z.; (Eds) Proceedings of the international conference on Computer Applications in Sports and Physical Education; (pp22-31) Isreal: Wingate Institute.
- Kopp, G. (2000). Key Factory in Layered Instruction; Unpublished doctoral dissertation, University of Calgary, Calgary, Alberta.
- Klein G, (2009) Handbook of Historical Sociology, MIT Press, Cambridge (MA). March, J. G. (2009), Encyclopedia in Sport and Technology, Oxford.
- Li, H., Hu, M., Li, G., (2020). Forecasting tourism demand with multisource big data. *Annals of Tourism Research*83, 1-13. 102912.
- McKinsey Global Institute (2011) Big data in Travel and Tourism: Technology and Innovation Research.
- March J.G, (2009), Encyclopedia in Sport and Technology, Oxford Soklobdžija, S. D., and Popesku, J. R.; (2017) The link between digital media and making travel choices; *Marketing*, 48(2), 75-85.
- Oliveira, T., Thomas, M., Baptista, G., and Campos, F. (2016) ESS. Mobile payment: understanding the determinants of customer adoption and intention to recommend the technology. *Computers in Human Behavior*, 61, 404–414.
- Press, G. (2014), 12 Big Data Definitions: What's Yours?, <http://www.forbes.com/sites/gilpress/2014/09/03/12-big-data-definitions-whatsyours/> [accessed 30/4/2021].
- Peng, R., Xiong, L., and Yang, Z. (2012) Exploring tourist adoption of tourism mobile payment: an empirical analysis. *Journal of Theoretical and Applied Electronic Commerce Research*, 7(1), 21–33.
- Russo, J. E & Shooemaker, J. H. (2009), *the new things works: Olympian Journey from Armor to Castaway*, Piatkus London.
- Waldorf (2020).

WTO (2019) International Tourism highlights 2ed Edition, World Tourism Organization: Madrid pp 23. eISBN: 978-92-844-2115-2; <https://www.unwto.org/publication/international-tourism-highlights-2019-edition>

WTTC and WTO (2010) The Economic impact of travel and tourism: Mail London World Travel and Tourism Council

Yazid, L.I.; (2017) Introductory Sport Sociology; Revised Edition; Ahmadu Bello University, Zaria

EFFECT OF EARTH MUD BRICKS STABILIZED WITH PALM TREE STRANDS ON COMPRESSIVE STRENGTH AND WATER ABSORPTION RATE

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Abstract

The study determined the effects of earth mud bricks stabilized with palm tree strands on compressive strength and water absorption rate. Determine the compressive strength of earth mud bricks with 0% control stabilization, determine the compressive strength of earth mud bricks with 10%, 15% and 20% palm tree stabilization, find out the water absorption rate of earth mud bricks with 0% control stabilization and find out the water absorption rate of earth mud bricks stabilized with palm tree strand. Four research questions guided the study. The study adopted true experimental research design. The Laboratory test was conducted in Building Department of the Federal University of Technology, Minna. A total of 54 earth mud bricks cubes were produced consisting 12 mud cubes for 0% control stabilization and 36 mud cubes for 10%, 15% and 20% stabilization for compressive strength and 6 mud cubes for water absorption rate. Materials used were palm tree strand, earth mud and water while the test conducted were compressive strength and water absorption rate. The findings of the study revealed that the compressive strength of earth mud brick stabilized with palm tree strand at 10% with 2.12 Nmm² is not in conformity, 15% with 2.53 Nmm² at 28 days is in conformity with Nigerian Industrial Standard (NIS) (2.5–3.45 Nmm², while 20% with 14.27 Nmm² is above the NIS value. The findings on the water absorption rate of earth mud brick stabilized with strands are 8.45%, 9.21% and 7.25% which is in conformity with NIS of 12% minimum standard. It was therefore recommended that building professionals should encourage the use of palm tree strand at 15% in conformity and 20% stabilization since it yielded high compressive strength for the production of stabilize earth mud bricks for building construction and government should organize training and sensitization on the percentage of palm tree strands required in the production of stabilize earth mud bricks of high compressive strength with good water absorption rate.

Key words: Earth Mud Bricks, Palm Tree Strands, Compressive Strength, Water Absorption Rate.

Introduction

Earth mud bricks are made by mixing earth with water, placing the mixture into moulds and drying the bricks in the open air, straw or other fibres that are strong in tension are often added to the mixture of earth and water to help reduce cracking. Earth mud bricks are bonded with the earth mortar to build walls, vaults and domes (Downton, 2013). Earth mud brick is

one of the most important material for construction industries. It was anciently produced by mixing the virgin resources, forming the bricks. Adeleke (2008), reported that earth mud bricks are mixture of earth and water which is cast in moulds and allowed to cure between 7-14 days or even more depending on weather conditions. Adams and Agib, (2001) however argued that in order to improve the durability of earth mud bricks one may need to stabilize it with additional palm tree derivatives.

Palm tree strands are produced by cutting the palm tree into logs, splitting the logs into softer tissues to dry, then further processed by removing the strands fibres from the tissues. According to Yalley and Seidu, (2018) the strands come in various inches ranging from 12-16 inches long, the curly stems which are used in coiling, floral design, basket making, creative art work and native traditional arts. The strands are also flexible and easy to work with depending on the purpose to which is being used, when this is used as stabilizer of earth mud bricks, it may help to increase its strength and quality likewise with addition of other derivatives like palm tree powder and palm tree ash.

Earth mud stabilization is a method often used to improve earth mud strength and increase resilience to softening by water through bonding the earth mud particles together with stabilizing agents. Research has shown that it is possible to provide construction materials and methods that are appropriate for all environments and affordable for stabilizing mud bricks which are called stabilizers Otunyo & Chukwuigwe, (2018). Earth mud stabilization additives are used to improve and maintain earth mud moisture content, increase earth particles cohesion and serve as cementing and water proofing agent. The common earth mud stabilization techniques are becoming costly day by day due to the rise in cost of the stabilizing agents like cement and lime (Omar, 2017). Thus, the use of agricultural waste like rice husk ash, bamboo leaf ash, palm tree ash, powder, and strands and others will considerably improve the durability and compressive strength properties of the earth mud brick since no building unit can perform its function without these requirements most especially as an alternative.

The compressive strength of building plays an important role in the durability, stability and average strength of a building. Igwe, (2015) stated that compressive force of bricks is a vital data for ascertaining the characteristics of the output produced. Compressive strength refers to the ability of the bricks to withstand load or stress placed on them before they break (Ikechukwu, 2010). Johnson, (2014) further argued that Compressive strength is the capacity of a material or structure to withstand load tending to reduce size, as opposed to which withstand loads tending to elongate or resist failure. The addition of palm tree strands will help in improving the durability, compressive strength and water absorption rate.

Water absorption rate is the quantity of water contained in a material such as earth mud, clay and wood. It is the amount of water present in a moist sample, it can be expressed on wet or dry basis. Water absorption rate is determined by measuring the decrease in mass of saturated brick and surface dry sample. A weighing balance and a water tank will be used in the water absorption test (Makinde, 2007). The water absorption rate determines the physical properties of mud bricks when produced to meet the required standard (Samuel, 2015). Water absorption test on earth mud bricks are conducted to determine properties of mud bricks such as durability, hardness, sound insulation and behavior of bricks in weathering. This can be achieved through determining the effect of the produced earth mud brick stabilized with palm tree derivatives. This study is set to assess the effect of earth mud bricks

stabilized with palm tree strands on compressive strength and water absorption rate by 0% control, 10%, 15% and 20% as an alternative building materials.

The vast availability of earth mud with palm tree strands in a large quantity within the regions around the world, and minimizing energy use for transportation (during importing and exporting) and generally intermediate-technology solutions for production of earth mud brick, they do not require sophisticated machinery or specialized expertise to construct, and can be constructed quickly when compared to conventional building unit of sandcrete block. These factors not only make alternative construction technologies attractive for developing countries in general, but also make them particularly well suited to solve economical, social and environmental related problems. In support of the above, Kareem *et al*, (2016) pointed out that ever increasing cost of conventional building material is a matter of serious concern that calls for the investigation of alternative building materials. Thus, determination of the effect of earth mud bricks stabilized with palm tree strand on compressive strength and water absorption rate is the need for this study.

Purpose of the Study

1. Determine the compressive strength of earth mud bricks with 0% control stabilization.
2. Determine the compressive strength of earth mud bricks with 10%, 15% and 20% palm tree stabilization.
3. Find out the water absorption rate of earth mud bricks with 0% control stabilization
4. Find out the water absorption rate of earth mud bricks stabilized with palm tree strand.

Research Questions

1. What is the compressive strength of earth mud bricks with 0% control stabilization?
2. What is the compressive strength of earth mud bricks with 10%, 15% and 20% palm tree stabilization?
3. What is the water absorption rate of earth mud bricks with 0% control stabilization?
4. What is the water absorption rate of earth mud bricks stabilized with palm tree strands?

Materials and Method

The study adopted true experimental research design. The study was conducted in Building Department Laboratory of the Federal University of Technology, Minna. A total of 54 earth mud bricks cubes were produced consisting 12 mud cubes for 0% control and 36 mud cubes for 10%, 15% and 20% palm tree stabilization for compressive strength and 3 earth mud bricks cubes for water absorption rate of 0% control and 3 earth mud cubes for strands stabilization sample test. Materials used were earth mud, palm tree strand and water while the test conducted were compressive strength and water absorption rate.

Experimental Procedure

Procedure for testing Compressive Strength of Earth Mud Bricks (Cubes)

A total number of 54 earth mud brick were produced with palm tree strands stabilization, 36 mud brick cubes for 10%,15% and 20% strands stabilization, 12 earth mud bricks cubes for 0% control compressive strength and 3 earth mud bricks cubes for water absorption rate of 0% control and 3 mud cube for strands stabilization.

1. Earth mud bricks Cubes were soaked in water for 24 hours after curing for 7, 14, 21 and 28 days respectively.
2. Earth mud bricks Cubes were weighed and recorded.
3. Three earth mud brick cubes for each percentage stabilization was taken to the crushing machine for crushing, each for 7, 14, 21 and 28 days cured.

4. The machine was set in action and operated to carryout compressive strength test of cubes.
5. The force or reading on the machine was noted and recorded. Compressive strength

$$= \frac{\text{load failure}}{\text{cross sectional area of value}}$$
6. The load failure value of each of the three mud cubes crushed was taken and used to calculate the compressive strength for each percentage stabilization of palm tree derivatives (powder, ash and strands).

Procedure for Testing Water Absorption Rate

- i. Earth mud bricks cubes of 100mm x 100mm x100mm were weighed and recorded.
- ii. Three earth mud bricks cubes of each percentage were soaked in water for twenty-four (24) hours.
- iii. The weight of wet earth mud bricks cubes were taken and recorded after removal from water.

Weight of wet bricks (cubes) = M_2

Weight of dry bricks (cubes) = M_1

Therefore, water absorption rate formular is:

$$\text{Absorbance rate} = \frac{M_2 - M_1}{M_1} \times 100$$

$$\frac{\text{wet weight} - \text{dry weight}}{\text{dry weight}} \times 100$$

Research Question One

What is the compressive strength of earth mud bricks with 0% control stabilization?

Table 1: Compressive Strength of Earth Mud Bricks with 0% Stabilization

The laboratory test results in table.1: of compressive strength of earth mud bricks with 0% control stabilization of 3 earth mud cubes

S/NO.	0% Control	Age of curing (days)	Mould size	Water/earth mud ratio	Curing type	Weight of mud bricks after curing (g)	Average weight of mud bricks (g)	Failure load (N)	Compressive strength (N/mm ²)	Average compressive strength(N/mm ²)
1	0	7	100 x 100	0.15	Open air	870		18.3	1.83	
2	0	7	100 x 100	0.15	Open air	900	916	18.6	1.86	1.84
3	0	7	100 x 100	0.15	Open air	980		18.5	1.85	
4	0	14	100 x 100	0.15	Open air	1080		17.5	1.75	
5	0	14	100 x 100	0.15	Open air	1180	1153	17.8	1.78	1.77
6	0	14	100 x 100	0.15	Open air	1200		18.0	1.80	
7	0	21	100 x 100	0.15	Open air	1300		17.4	1.74	
8	0	21	100 x 100	0.15	Open air	1350	1366	17.6	1.76	1.79
9	0	21	100 x 100	0.15	Open air	1450		18.7	1.87	
10	0	28	100 x 100	0.15	Open air	1600		18.7	1.87	
11	0	28	100 x 100	0.15	Open air	1580	1633	18.9	1.89	1.90
12	0	28	100 x 100	0.15	Open air	1720		19.5	1.95	

crushed at 7days showed 1.83 N/mm², 1.86 N/mm², 1.85 N/mm², while at 14 days revealed 1.75 N/mm², 1.78 N/mm², 1.80 N/mm² and 21 days showed 1.74 N/mm², 1.76 N/mm², 1.87 N/mm² and at 28 days revealed 1.87 N/mm², 1.89 N/mm² and 1.95 N/mm² which were all below the Nigerian Industrial Standard NIS87: 2007 (2.5-3.45N/mm²) at 28 days. The compressive strength of earth mud bricks with 0% control at 7days is 1.84N/mm², at 14days shows 1.77N/mm², at 21days is 1.79N/mm² and 1.90N/mm² at 28days which were all below the NIS87 specified standard. From the results analyzed it showed that as the curing days increases the compressive strength of bricks decreased.

Research Question two

What is the Compressive Strength of Earth Mud Bricks with Palm Tree Strands at 10%, 15% and 20% stabilization?

Table 2: Compressive Strength of Earth Mud Bricks with 10% Palm Tree Strands stabilization.

S/No.	% Stabilization	Age of curing (days)	Mould size	Water/earth mud ratio	Curing type	Weight of mud bricks after curing (g)	Average weight of mud bricks (g)	Failure load (N)	Compressive strength (N/mm ²)	Average compressive strength(N/mm ²)
1	10	7	100 x 100	0.15	Open air	1593		16.8	1.68	
2	10	7	100 x 100	0.15	Open air	1680	1624	19.3	1.93	1.76
3	10	7	100 x 100	0.15	Open air	1600		16.9	1.69	
4	10	14	100 x 100	0.15	Open air	1720		17.8	1.78	
5	10	14	100 x 100	0.15	Open air	1700	1712	18.4	1.84	1.83
6	10	14	100 x 100	0.15	Open air	1717		18.9	1.89	
7	10	21	100 x 100	0.15	Open air	1840		16.8	1.68	
8	10	21	100 x 100	0.15	Open air	1819	1828	17.9	1.79	1.77
9	10	21	100 x 100	0.15	Open air	1825		18.5	1.85	
10	10	28	100 x 100	0.15	Open air	2050		20.5	2.05	
11	10	28	100 x 100	0.15	Open air	2130	2116	21.3	2.13	2.12
12	10	28	100 x 100	0.15	Open air	2170		21.7	2.17	

The laboratory test results in table.2: of compressive strength of earth mud bricks with 10% palm tree strands stabilization of 3 cubes crushed at 7days revealed 1.68N/mm², 1.93N/mm², 1.69N/mm², at 14days, 1.78N/mm², 1.84N/mm², 1.89N/mm² at 21days, 1.68N/mm², 1.79N/mm², 1.85N/mm² and at 28days 2.05N/mm², 2.13N/mm² and 2.17N/mm² which were all below the Nigerian Industrial Standard NIS87: 2007 of 2.5-3.45N/mm² at 28 days. The analysis further revealed that the average Compressive strength of earth mud bricks with 10% palm tree strands stabilization at 7days showed 1.76N/mm², at 14days shows, 1.83N/mm², 21days is 1.77N/mm² and 28days 2.12N/mm² which were below the minimum stipulated value by NIS87.

Table 3: Compressive Strength of Earth Mud Bricks with 15% Palm Tree Strands stabilization.

S/No.	% Stabilization	Age of curing (days)	Mould size	Water/earth mud ratio	Curing type	Weight of mud bricks after curing (g)	Average weight of mud bricks (g)	Failure load (N)	Compressive strength (N/mm ²)	Average compressive strength (N/mm ²)
1	15	7	100 x 100	0.15	Open air	1760		17.0	1.70	
2	15	7	100 x 100	0.15	Open air	1820	1790	18.2	1.82	1.80
3	15	7	100 x 100	0.15	Open air	1790		18.9	1.89	
4	15	14	100 x 100	0.15	Open air	1930		19.2	1.92	
5	15	14	100 x 100	0.15	Open air	1848	1882	18.4	1.84	1.91
6	15	14	100 x 100	0.15	Open air	1870		19.7	1.97	
7	15	21	100 x 100	0.15	Open air	2060		20.8	2.08	
8	15	21	100 x 100	0.15	Open air	2181	2153	21.8	2.18	2.15
9	15	21	100 x 100	0.15	Open air	2220		22.2	2.22	
10	15	28	100 x 100	0.15	Open air	2400		24.0	2.40	
11	15	28	100 x 100	0.15	Open air	2400	2443	24.1	2.41	2.44
12	15	28	100 x 100	0.15	Open air	2530		25.3	2.53	

The laboratory test results in table 3: of compressive strength of earth mud bricks with 15% palm tree strands stabilization of 3 cubes crushed at 7days revealed 1.70N/mm², 1.82N/mm², 1.89N/mm² at 7days, 1.92N/mm², 1.84N/mm², 1.97N/mm² at 14days, 2.08N/mm², 2.18N/mm², 2.22N/mm² at 21days and 2.40N/mm², 2.41N/mm² at 28 days are not in conformity with Nigerian Industrial Standard NIS87 but at 28days the strength increases to 2.53N/mm², the analysis shows that the result is in conformity with Nigerian Industrial Standard NIS87: 2007 of 2.5-3.45N/mm² at 28days minimum compressive strength of earth mud bricks. The analysis further showed that the result for 28days is in conformity with Nigerian Industrial Standard NIS87 as the curing days increases the compressive strength of bricks increases.

Table 4: Compressive Strength of Earth Mud Bricks with 20% Palm Tree Strands stabilization.

S/No.	% Stabilization	Age of curing (days)	Mould size	Water/earth mud ratio	Curing type	Weight of mud bricks after curing (g)	Average weight of mud bricks (g)	Failure load (N)	Compressive strength (N/mm ²)	Average compressive strength(N/mm ²)
1	20	7	100 x 100	0.15	Open air	1744		172.4	17.24	
2	20	7	100 x 100	0.15	Open air	1671	1718	186.5	18.65	17.20
3	20	7	100 x 100	0.15	Open air	1740		157.2	15.72	
4	20	14	100 x 100	0.15	Open air	1612		146.3	14.63	
5	20	14	100 x 100	0.15	Open air	1641	1646	129.1	12.91	14.35
6	20	14	100 x 100	0.15	Open air	1486		155.2	15.52	
7	20	21	100 x 100	0.15	Open air	1624		123.5	12.35	
8	20	21	100 x 100	0.15	Open air	1603	1623	146.0	14.40	13.49
9	20	21	100 x 100	0.15	Open air	1642		137.4	13.74	
10	20	28	100 x 100	0.15	Open air	1612		146.0	14.60	
11	20	28	100 x 100	0.15	Open air	1641	1646	129.1	12.91	14.27
12	20	28	100 x 100	0.15	Open air	1686		153.2	15.32	

The laboratory test result in table 4: for compressive strength of earth mud with 20% palm tree strands stabilization of 3 cubes crushed at 7days had 17.24N/mm², 18.65N/mm², and 15.72N/mm², at 7days, 14.63N/mm², 12.91N/mm², 15.52N/mm² at 14days, 12.35N/mm², 14.40N/mm², 13.74N/mm² at 21days and 14.60N/mm², 12.91N/mm² and 15.32N/mm² at 28days are higher than the Nigerian Industrial Standards NIS87: 2007 minimum compressive strength of bricks of 2.5-3.45N/mm² at 28 days. The result analyzed shows clearly that as curing days increases and the percentage stabilization increases, the compressive strength of the bricks increased and the strength is higher than the minimum value stipulated by NIS87.

Research Question Three

What is the water absorption rate of earth mud bricks with 0% control stabilization?

Table 5: Water absorption rate of mud bricks with 0% control stabilization

Dry weight of mud (g) bricks W1	Average dry weight of mud bricks (g) W1	Wet weight of mud bricks (g) W2	Average wet weight of mud bricks (g) W2	Absorbance rate %	Average absorbance rate %
1.077		1.189		10.39	
1.150	1.094	1.371	1.322	19.21	20.87
1.057		1.406		33.01	

The test analysis in table 5 above, shows that 3 earth mud bricks cubes soaked in water 24hrs for water absorption had the following absorption rate 10.39%, falls within the Nigerian Industrial Standard NIS87: 2007 of 12% minimum specified water absorption rate while 19.21% and 33.01% are in conformity with the Nigerian Industrial Standard NIS87: 2007 with high water absorption rate.

Research Question four

What is the water absorption rate of earth mud bricks stabilized with palm tree strands?

Table 6: Water Absorption Rate of Earth Mud Bricks Stabilized with Palm Tree Strands

Dry weight of mud (g) bricks W1	Average dry weight of mud bricks (g) W1	Wet weight of mud bricks (g) W2	Average wet weight of mud bricks (g) W2	Absorbance rate %	Average absorbance rate %
1.585		1.719		8.45	
1.573	4.77	1.718	5.166	9.21	8.30
1.612		1.729		7.25	

The laboratory test results table 6, shows that 3 earth mud bricks cubes soaked in water 24hrs for water absorption had the following absorbance rate 8.45%, 9.21% and 7.25% falls within the Nigerian Industrial Standard NIS87: 2007 of 12% specified maximum water absorption rate for bricks. The analysis shows clearly that the water absorption rate of strands stabilization falls within the minimum stipulated value by NIS87:2007.

Discussion

The results in table 1 relating research question one revealed that the compressive strength of the three earth mud bricks crushed for control had values of 1.83N/mm^2 , 1.86N/mm^2 and 1.85N/mm^2 at 7days and 1.87N/mm^2 , 1.89N/mm^2 and 1.95N/mm^2 at 28days with average compressive strength of 1.84N/mm^2 at 7days, 1.77N/mm^2 at 14days, 1.79N/mm^2 , at 21days and 1.90N/mm^2 at 28days which is lower than the minimum specified compressive strength for earth mud bricks by NIS87. This findings is in line with the view of Johnson, (2014) who argued that a good earth mud brick has a strength of around 1.6 to 1.9 mpa which indicate that the mud bricks are of good quality for use. Supporting this findings Ikechukwu (2010) also reported that the maximum compressive strength for earth mud bricks ranges from 1.6 to 1.9 mpa, the author further emphasized that compressive strength of building materials can be identify through laboratory compressive strength tests to measure the amount of compressive load a material can bear before fracturing.

Result on research question two showed that palm tree strands had lower compressive strength than the minimum standard specified by NIS87: 2007 with 10% stabilization given 1.68N/mm^2 , 1.93N/mm^2 , 1.69N/mm^2 , at 7days, 1.78N/mm^2 , 1.84N/mm^2 , 1.89N/mm^2 , at 14days, 1.68N/mm^2 , 1.79N/mm^2 , 1.85N/mm^2 , at 21days, and 2.05N/mm^2 , 2.13N/mm^2 , 2.17N/mm^2 , at 28days and 15% stabilization has 1.70N/mm^2 , 1.82N/mm^2 , 1.89N/mm^2 , at 7days, 1.92N/mm^2 , 1.84N/mm^2 , 1.97N/mm^2 , at 14days, 2.08N/mm^2 , 2.18N/mm^2 , 2.22N/mm^2 at 21days, and 2.40N/mm^2 , 2.41N/mm^2 , but 2.53N/mm^2 , at 28days is within the minimum value specified by NIS87: 2007 with average compressive strength of 1.76N/mm^2 , 1.83N/mm^2 , 1.77N/mm^2 and 2.12N/mm^2 , for 10% stabilization while 1.80N/mm^2 , 1.91N/mm^2 , 1.15N/mm^2 and 2.44N/mm^2 for 15% and the strength increased for 20% due to increase in percentage stabilization with high compressive strength of 17.20N/mm^2 , 14.35N/mm^2 , 13.49N/mm^2 and 14.27N/mm^2 which are not in conformity with the specified value by NIS87. Compressive strength of bricks varied from 4.3 to 6.9 mpa with an average of 5.7 mpa (2-6 mpa for earth mud bricks (Muntosh, 2014) Also in support of that findings with Zhiri (2019) stated that compressive strength of 10% RHA replacement was 16.6N/mm^2 , close to control with 18.5N/mm^2 and strength of 10% RHA replacement gives compressive strength close to standard specified compressive strength of concrete from the findings of this study PTD strands prove to have properties that improve the quality and standard of earth mud bricks.

The result on water absorption test of 10% control was 10.39% ,19.21% and 33.10%. the water absorption rate of 10.39% falls within the conformity range of 12% while the rest are not in conformity. The water absorption rate of earth mud bricks stabilized with palm tree strands falls within the minimum specified standard for water absorption rate of 12% absorption rate by NIS87: 2007 with 8.45%, 9.2% and 7.25% and average water absorption rate of 8.30% within the specified value for minimum water absorption rate compare to the control with average of 21.45% which is not in conformity. In line with Nigerian Industrial Standard NIS87: 2007 the specified minimum water absorption of bricks conformity is 12%.

Conclusion

It was concluded that palm tree strands can be used for stabilization of earth mud bricks with strands at 15% cured for 28days within conformity with 2.53N/mm² and 20% cured for 28days with 15.32N/mm², because it yielded high comprehensive strength above the specified minimum value for earth mud bricks by NIS87: 2007 which are stronger and good to stand the test of time. This could bring about the reduction of construction cost and which is readily available construction materials for shelter.

It was concluded that palm tree strands can be introduced in the production of stabilized earth mud bricks as local natural materials to reduce cost of construction and enable the low-class individual to have access for shelter themselves at lower cost with ease and motivate unemployed youths to venture into producing stabilized earth mud bricks for commercial purpose and bring about societal development. It was also concluded that the water absorption rate of 10.39%, 8.45%, 9.21% and 7.25% earth mud bricks falls within the specified value of conformity class of 12% for earth mud bricks by NIS87: 2007. Therefore is considered good in quality and strong for construction purposes,

Recommendations

1. Building professionals should encourage the use of palm tree strand at 15% within conformity and 20% since it yielded high compressive strength for the production of stabilize earth mud bricks for building construction
2. Workshops and seminars should be organized periodically to enlighten producers of earth mud bricks on the importance of adhering to standards and engineers should always test for compressive strength and water absorption rate of earth mud bricks before allowing for usage.
3. Government should provide avenue for awareness campaign through social media and television on the use of earth mud bricks stabilized with palm tree derivatives for low cost construction and production of stabilized earth mud bricks to enhance development and empower individuals.
4. Building construction industries should emphasize on the importance of using natural alternative building material such as stabilized earth mud bricks and compliance with specified standard by Nigerian Industrial Standard Organization for the producers.

REFERENCES

- Adam, E. A. & Agib, A.R.A. (2001). Compressed Stabilized Earth Blocks Manufacture in Sudan Printed by Graphoprint for the United Nations Educational Scientific and Cultural Organization, *UNESCO*; Paris, France. *Journal of Civil and Environmental Research*, 7(1), 1-7.
- Adeleke (2018). Earth Mud as an Ancient Indigenous Building Material for Low Cost Housing. 8(2), 1-7.
- Downton. P. (2013). Earth Mud Bricks Production Process as Alternative raw Materials for Construction Industries. *Materials and Structures*, 49(1), 3945-3955.
- Ikechukwu, U. F. (2010) Compressive Strength and Cost of Sandcrete Blocks and Blocks Made with Quarry Dust in Nigeria, A Case Study of Abakaliki Quarry *Journal of Chemical Mechanical and Engineering Practice*, 2(3), 9-17.
- Igwe, C.O. (2015) Assessment of Multistorey Building Failure in Abuja, Nigeria, Department of Industrial and Technology Education, Federal University of Technology, Minna, Niger State.
- Johnson, Urbanek, T, & Lee, (2014). "Column Compression Strength of Tubular Packaging Forms Made of Paper" (PDF), 34, 6 *Journal of Testing and Education* 31-40.
- Kareem, W. B. Okwori, R. O. Kagara, A. B. & Igwe C. O and Ayandokun S. T. (2016) A Comparative Study of Compressive Earth Bricks (CEB's) and Sandcrete Blocks for Building Construction. Department of Industrial and Technology Education Federal University of Technology, Minna, Niger State Nigeria
- Makinde, F. A. (2007) Minimizing the Collapse of Building in Nigeria, Seminar Paper, Faculty of Environmental Studies, Osun State College of Technology, Esa-Oke. 20-21.
- Muntosh (2014). Compressive Strength of Building Materials. *Interdisciplinary Journal of Contemporary Research in Business*, 4, 1267-1272.
- Omar (2017). Soil Stabilization Techniques with Agricultural Wastes. *Rwanda Journal*, Volume 28, Series E: Agricultural Sciences.
- Otunyo A. W. & Chukwuigwe. C. C. (2018). Investigation of the Impact of Palm Tree Bunch Ash on the Stabilization of Poor Laterite Soil. *Nigeria Journal of Technology (NJOTECH)* Vol, 37, No 3, July 2018 pp, 600-604.
- Samuel, S. O. (2015) A Comparative Study of the Hygroscopic Properties of Hollow and Solid Sandcrete Blocks. *Journal of Emerging Trends in Engineering and Applied Science*, 6(7), 144-150.

- Yalley PP. & Seidu. C. (2013). Use of Waste and Low Energy Materials in Building Block Construction. *Materials and Structures*, 46, 1449-1457.
- Zhiri, D. (2019) ‘‘Effect of Rice Husk Ash RHA as Partial Replacement of Portland Cement in Concrete Production for Building Construction in Minna, Niger, State. M.Tech Thesis, Federal University of Technology, Minna, Niger State.

ADULT EDUCATION AND HUMANITARIAN DEVELOPMENT IN THE MIDST OF NATIONAL CHALLENGES

By

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Abstract

This paper surveyed the adult education and humanitarian development in the midst of national challenges. It began by writing what UNESCO, 2001 said about the concept education which it identified as a very powerful instrument for reducing inequality as well as an important avenue for improving health and the general well-being of the individual and so on. It went further to explain extensively the concept adult education from the Nigeria's National Policy of Education, (2004) and review some literature definition of the concept from some authors. The concept of humanitarian development was discussed in brief which includes that it occurs when armed conflicts break out or national disaster happens. The whole communities are affected, disrupting their day-to-day lives and long term development prospect and so on. National challenges were also discussed which starts from confusion and conflicts which emanated from such issues of resources control, tribalism, youth restiveness, land disputes and so on. Religions conflict were also inferred. Challenges facing adult education in humanitarian development was discussed. Conclusion was also inferred which included that adult education gives the adults and the youths more knowledge and wisdom which will make them to have more skill to better themselves and their community instead of engaging in warfare. This would bring a lot of development in a society and the country. Some recommendations were also made which included; that adult education programmes should be incorporated in all developmental initiatives and social programmes as an important contribution to sustainable development, economic prosperity, peaceful resolution of conflict, social cohesion and political stability. That we should recognize and accept adult education strategies as problem solving tools in the sense that without education we cannot bring about positive change.

Key Words: *Adult Education, Humanitarian Development, National Challenges*

Introduction

In the changing world of today, education has been defined by many scholars, organisations and research institutions from different perspectives. For example, UNESCO (2001) rightly said education has been identified as a very powerful instrument for reducing inequality as well as an important avenue for improving health and the general well-being of the individual. As can be seen in a modern society education including adult education has become an important tool for the achievement of rapid and sustainable growth and development. The education of adult has

been acknowledged for it makes quick impact on the development of a nation unlike the education provided for children and youths that would be investment for the future because adults are at the work field now.

From literatures for example, Liveright and Haygood (1968), Delker (1974), Omolewa (1981), Aderinoye (1997), UNESCO (2001) to mention this few, we could infer that there is correlation between level of literacy and level of development. The higher the level of education, the higher the level of development and vice-versa. The stage of development is determined principally by the adult populace, both male and female. Thus, adult education is a must agent of development which African governments must give a special place in their development planning. For instance, some years ago, one of the UNESCO Director General fully supports this view when he said by quoting Nyerere (1978) “It is not the children of today who hold the present destiny of Africa in their hands, it is the adults. So, it is only by establishing effective communication with the adult population by helping them to adjust to a rapid changing world that an immediate impact can be made on the urgent problems of society and essential progress be brought about”. Hence, adult education can be seen here as a process by which effective communication is established with the literacy level of the citizens.

Prior to the discussion on this paper, it is imperative to give conceptual clarification of adult education and humanitarian development.

Adult Education

Nigeria’s National Policy of Education (2004) recognizes adult education as covering functioning literacy and continuing education for adults and youths, functional and remedial education for young people and out of school children who did not complete secondary school and need to improve their basic knowledge and skills, in-service-on-the-job, vocational and also professional training for different categories of workers and professionals for constant updating and improvement of their knowledge and skills, aesthetic, cultural and civic education for public enlightenment.

Adult education is defined differently by different people in different cultures and communities. It has no definite acceptable definition. Hence, it embraces so many activities and addresses many problems which may be individual, societal and national. Thus, Obidiegwu (2011) stated that the choice of programmes of adult education for each individual, society and/or culture is derived from particular needs of such individuals, society or culture at a particular period of time.

Peterson (2017) defined adult education as a practice in which adults engage in systematic and sustained self-educating activities in order to gain new forms of knowledge, skills, attitudes or values. It can mean any form of learning, adults engage in beyond traditional schooling, encompassing basic literacy to personal fulfillment as a lifelong learner.

Hassan and Oyebamiji (2012) stated that adult education stems directly from the people and it has its major forms in the local community, with its primary goal being strengthening and improving the process of group problem-solving. Adebowale (2008) described the concept adult

education as a process by which persons who have terminated their initial circle of continuous education may undertake sequential and organized activities with the conscious intention of bringing about changes in themselves with regard to information, knowledge, understanding and skill appreciation and attitude. Aderinoye (2004) sees adult education as all and any deliberate and systematically planned educational activities that have the adult as its target, that is designed around the interest and self-expressed concern of adult, the intention of which is to solve immediate problems and it is an activity that is part-time.

Odewusi (2012) said that adult education may be defined as the education provided for men and women who for one reason or the other dropped out of the formal school system, or those who for purposes of work or other engagements are unable to register for full time courses, abandoning in the process, their work and family. Okenwa-Ojo (2020) stated that adult education could be defined as a set of remedial education or continuing education that is out to help the youths and the adults to fill the vacuum they have encountered in education due to one reason or the other.

Looking at the above, we could conclude that adult education takes the form of evening classes which looks like formal programmes graduated over primary, secondary and post primary phases. Others are the extra-mural programme of the University of Ibadan and Ife and the Evening School Programmes established in the Law and Business Administration at the University of Lagos.

Humanitarian Development

This occurs when armed conflict breaks out and the whole communities are affected, disrupting their day-to-day lives and long term development prospect. Here, humanitarian aid is designed to save lives and properties and to alleviate suffering during and in the immediate aftermath of emergencies. Whereas development aids responds to ongoing structural issues, particularly systematic poverty that may hinder economic, institutional and social development in any given society and assists in building capacity to ensure resilient communities and sustainable development and different forms of aid often have both humanitarian and development components.

It is worthy to note that development aid can exist without humanitarian aid in developing countries that do not have humanitarian crisis. Although it also often exists in addition to humanitarian aid during and after crises. For instance, if an earthquake strikes in a country, short-term humanitarian aid is needed. This includes the delivery of food and water, provision of temporary shelter as well as health services.

As can be seen in Nigeria, development infers meeting basic needs, reducing poverty, reducing unemployment and inequality, improving access to education, raising life expectation, raising living standards, expanding economic and social needs through acceptable economic growth. Hence, development entails an end and must affect the majority of the people in a community, society and country not just a few. To, Akinpelu (2002) people are the subject as well as the object of development. In other words, people bring about development and development reflects on people. Man is the director of development; he is the engineer as well as the beneficiary of all

developments. Development is highly attached with enriching human resources and potentials rather than ordinary structures, for example, elegant buildings, highways, shop malls and so on. Real development is economic, political, social and moral.

Hall (2003) stated that development is being greatly determined by science, technology and economy with their attendant effects on a number of social, political, economic, cultural and ecological variables affecting human quality of life and environmental equilibrium in different manners. These changes equally shows in the changing form of work, employment, ecological crisis and tension between social groups based on culture, ethnicity, gender roles, income and religion. It means growing up, becoming larger or more complete. It involves changing from a lower level to a higher level which is always better than before. If a country is able to make innovations she was unable to do before, that country is said to be developing. Again, if a baby was able to increase in size, crawl, answer questions reasonably etc. it is a sign that the baby is developing as well. When most of the things required to improve learning are provided such as the use of power point in teaching, provision of computers, a conducive learning classroom, etc. there is bound for development to take place. The student will do well in their academic undertaking, the technological skill will be improved, life will be easy and enjoyable for all, and so on.

National Challenges

Education is most valuable things that are peculiar to nations, people and times. Njoku (2015) believes that value system promotes national image, respect for human life and corporate values. Without this, growth and development of the society is retarded in many aspects through the breakup of material tendencies of the people. For instance, the various challenges which Nigeria is going through since 1914 have led to a state of confusion in all spheres (Ajiboye, 2010). Religious upheavals and ethnic bias continues to rear its head in different aspects of the country which is given room to instability and disunity.

The root of such confusions and conflicts has been seen around the issues of resources control, tribalism, youth restiveness, land disputes and so on. The phenomenon of religious conflicts has given rise to various ethno-religions groups such as the Bakassi Boys, the Odua People's Congress (OPC), Arewa People's Congress (APC), the Boko-Haram Insurgent, the organization of AMOTEKUN and the Movement for the Actualization of the Sovereign State of Biafra (MASSOB). All these set up groups emanated because of the various conflicts rearing heads in the country e.g. kidnapping, raping, murder, armed robberies and so on all over the nation. All these have gone a long way in hindering national development and hence, challenges the socio-economic and political progress of the nation.

Adult Education and Humanitarian Development in the Midst of National Challenges

Ogundare (2020) stated that education and indeed a functional one is the greatest instrument any country can engage in. It is through education that the necessary skills are acquired. Basic education scheme is clearly one of the tools for promoting national development and integration. He further stated that the formation of ideas and strategies in bringing about national development and integration is entirely in educational process. Self-reliance, better relationship, effective citizenship, national consciousness and national unity are fostered through education.

From the above insertions of Ogundare (2020) one would agree with him totally because adult education is a functional education which is a correct tool to enhance humanitarian development in the midst of national challenges. Aside from the economic benefits, acquisition of knowledge through adult education activities will definitely help illiterate Nigerians to perform better roles as citizens, as self-fulfilling persons and as family.

Adult education has a prominent role to play in achieving national development, it is a tool that can be utilized in eradicating ignorance which would be seen as hindrance in way of progress of a nation's development. Hence, development could be hindered if the citizens for whom development is meant are not literate.

Various adults' illiterates are engaged in one form of economic activity or the other while others who are semi-skilled traders like shoe makers, carpenters and plumbers have negative intelligence and ability to perform very well in their jobs. This is because they lack the tool of gaining easy access to information which will make them effective because of their illiteracy rate.

So, at this point adult education should be made available to such people to be literate and well informed. Hence, adult education and development go hand in hand. This is because the only tool for human liberation is education. Since education would make people to know what they desire, how to acquire it and put it into a proper use to achieve their self-identity, self-confidence, ability and creativity to face the world of work with purpose and pride.

Our democracy in this country today would have been more matured than what it is now if the majority of our adults are educated. The long term stay in office of our past military rulers is attributed to the lack of knowledge on the part of the adults who comprised the majority of the voters. For instance, majority of our great nationalists like late Obafemi Awolowo, got his law degree by correspondence method as an adult. Alvan Ikoku, Samuel Ayodele Banjo, Arthur Hercules Joseph of Ghana, Josiah Soyemi Ogunlesi of Nigeria, Chief Simeon Adebayo and Emmanuel Odukoya Ajayi and a host of others studied on a part-time basis having continued on their full-time employment. Each of them spent an average of five years to obtain his degree. (Okenwa, 1992). The knowledge some of this people acquired opened their eyes to the evil of colonialism which geared them up to challenge the colonial masters, the struggle they started eventually brought about our independence in 1960.

Adult education can enhance the adoption and development of new technologies if the mastery of a number of skills by illiterate or semi-literate is undertaken by Nigerians. The adult education programme can afford a large number of predominantly Nigerian farmers, entrepreneurs and other useful skills and knowledge which they can apply to their own and their nation's development. Also, the acquisition of adult education can help stack illiterates in Nigeria to obtain the scientific approach and thereby become more efficient at work by fostering cultural awakening, reduce all forms of prejudice and enhance civic responsibility. All these would eventually enhance good relationship, good harmony and unity in the midst of national challenges. The nation cannot be strong when the vast majority of her citizen lives in ignorance,

especially when knowledge confers strength. It is a fact that no nation can be self-reliant until all her citizens are functionally literate and thereby realize and utilize her potentials.

Challenges Facing Adult Education in Humanitarian Development

In spite of the achievement of adult education in uplifting the educational standard, and the level of awareness of Nigerian citizens, it is enveloped with many challenges. Some of these are;

- Lack of strong, specific and efficient laid out policy and methodology for effective supervision of adult education centres in Nigeria. For instance, the Ministries of Education, saddled with the responsibility of monitoring and evaluating the activities of the centres are not up and doing.
- Lack of funding: despite the fact that the national policy statement recommended that government should examine the possibility of subsidising approved evening classes as to make them tuition free, this is yet to be implemented.
- Most of the private adult education centres in the country, apart from those established by government institutions are not properly organized and administered. The quality of staff and work done is mostly unsatisfactory.
- There are no set standards for evaluation for progress and achievement. This have negative impact on improvement both on the learners and the educators.
- There are no specific adult education centres established by government to provide functional literacy education for adults who have never had the advantage of any formal education.
- The motive of some owners of adult education centres is to make quick money, hence, their exploitative behavior makes it difficult for leaners and the society to realise the goals of adult education

Conclusion

One can conclude that adult education being a functional educational programmesetup can assist in a great way in the midst of national challenges by helping the adults and youths to discover how to live a fruitful and satisfying life. Their acquired knowledge and skill would give them the impetus to learn how to think positively, it brings them out from the state of inferiority complex to realize their full potentials and to improve their wellbeing, their families, the society and the country as a whole. It helps the poor to improve their chances of changing their personal situation from being ignorant, poor and aggressive. It gives the adults and youths more knowledge and wisdom which will make them to have more skill to better themselves and their community instead of engaging in warfare. This would bring a lot of development in a society and the country.

Recommendations

Some recommendations of adult education in humanitarian development should include;

- That adult education programmes should be incorporated in all developmental initiatives and social programmes as an important contribution to sustainable development, economic prosperity and peaceful resolution of conflict, social cohesion and political stability.
- That we should recognize and accept adult education strategies as problem solving tools in the sense that without education we cannot bring about positive change.

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- That all donors including bilateral and international development partners should show good commitments and support and fund adult education programmes without bias.
 - That the organized private sector should be more supporting on the job training of not only their staff but also contribute to the curriculum process of adult education so that products of these centres would fit into their programme of activities.
 - That Nigerians should try to encourage and help others to know better than they found them, i.e. as an educated person, try to make one person educated, starting from our immediate environment.
 - That all structures should be strengthened by the local, state and federal governments to accommodate adult education practices, be it in theory or in practice.

REFERENCES

- Adebowale A. (2008). Millennium development goals in Nigeria, Retrieved July 5, 2008 <http://wk.oneworld.net/guide/nigeriadevelopment>.
- Aderinoye R.A. (2004). Adult and non-formal education and global challenges: Issues and perspectives. Ibadan, Department of Adult Education, University of Ibadan.
- Aderinoye, R.A. (1997). Literacy Education in Nigeria, University of Ibadan Publishing House, Ibadan.
- Ajiboye J.O. (2010). 50 years of Nigerian independence: Challenges and prospects. Journal of Arts and Social Science Update. Emmanuel Alayande College of Education Oyo, Oyo State.
- Akinpelu J. (2002). Philosophy and adult education. Ibadan, Stirling-Horden Publishers (Nig.) Ltd.
- Delker, P.V. (1974). Governmental roles in life-long learning *J. Res. Development Education*. 7(4), 24-53.
- Hall, R. (2003). How can learning environment contribute to sustainable development? M. Scullos, A. Alampel (Eds.), Environmental Education. The Mediterranean Perspective Workshop on Environmental Education. Athens proceedings of the meeting. Mio – ECSDE, Athens.
- Hassan M.A. & Oyebamiji M.A. (2012). Introduction to Adult Education. Ibadan, Gabesther Educational Publishers.
- Liveright, A.A. & Haygood, N. (1968). The exeter papers, report of the first international conference on the comparative study of adult education, Exeter, 1966 Centre for the Study of Liberal Education for Adults, Boston University, Boston, Massachusetts.
- Njoku O.I. (2015). Re-orientation of value system in Nigeria: A critique global. Journal of Arts and Social Sciences, 3 (2).
- Nyerere, J.K. (1978). Adult Education and Development in B. Hall and J.R. Kidd (Eds). Adult Learning: A design for action, London, Pergaman Press.
- Obidiegwu U.J. (2011). Definitions of adult education: clearing some misconceptions. Retrieved from <http://worksbeepress.com/druche-obidegwy/7/30> March, 2017.
- Odewusi M.B. (2012). Investment in adult and non-formal education as a panacea solution to the problem of underdevelopment nation. African Journal of Historical Sciences in Education 6 (1).

- Ogundare S.F. (2020). Education and national integration: 21st century realities. Keynote Address Presented at the Fifth National Conference of the School of Education, Emmanuel Alayande College of Education, Oyo.
- Okenwa M. (1992). Socio-economic factors and the terminal examination performance of extra-mural students of Ibadan University. A Ph.D. Thesis of the Faculty of Education, University of Ibadan.
- Okenwa-Ojo M. & Yusuff R.O. (2020). Benefits of national integration of adult and non-formal education in the 21st century. *Journal of Arts and Social Sciences Update*. Ibadan, Yumab Press, 8 (1).
- Omolewa, M.A. (1981). *Adult Literacy Practice*, Heinemann Nigeria, Ibadan.
- Peterson (2017). Contemporary issues in adult and non-formal education. O.O. Owoeye and K. Quadari (Eds) in special groups in *Adult and Non-Formal Education*. Oyo, Adeyoung Prints.
- UNESCO (2001). *Literacy and Non-Formal Education in the E-9 countries*, UNESCO, Paris.

INFORMATION TECHNOLOGY IN TOURISM AND HOSPITALITY INDUSTRY IN NIGERIA

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Abstract

Information Technology has become an integral part of our lives, completely changing how we spend our leisure time and constant technological advances have even made their way into the travel industry. We can now book hotel rooms, flights, sightseeing tours, and other activities, and plan our entire trips, all from mobile devices. Technology has revolutionized the way we travel, making our travel adventures more convenient and fun, while these massive changes in the tourism industry is what we now call travel technology. The tourism and hospitality industries have widely adopted information technology (IT) to reduce costs, enhance operational efficiency and most importantly to improve service quality and customer experience. This paper sheds light on the evolution of IT, applications in the tourism and hospitality industries and concluded that for tourism and hospitality industry to be at par with its counterpart in the developed world consumers, have to make use of IT to select and customize their products as well as to personalize their experience. The paper recommends among others that governments must play an active role in boosting technology adoption through policy interventions.

Keyword: *Information Technology, Tourism, Hospitality & Industry*

Introduction

Information Technology has played an important role in the hospitality and tourism industry over the last decade while the Technology has helped reduce costs, enhance operational efficiency, and improve services, customer experience while both customers and businesses can benefit from improved communication, reservations and guest service systems (Li and Law,2020). Technology has helped tourism and hospitality industries replace expensive human labor with technological labor, which has helped reduce labor costs, avoid customer service issues and has transformed the tourism sector all over the world (Lim, and Ok, 2021). On the demand side, it empowers visitors to identify, customize and purchase tourism products, services and on the supply side, it is playing a critical role in the competitiveness of tourism organizations and destinations and providing tools for developing, managing and distributing tourism product offerings globally(Lin, Ho, and Sambasivan, 2020). Technology is a key tool available for tourism promotion, if well planned and invested it can play a significant role not only in creating safe destinations but also in addressing existing challenges in the region's tourism sector (Jiang, Chen, and Xu, 2021).

Its implementation requires close collaboration not only between governments in the region, but also between the public and private sectors. Although various services for tourism is predominantly provided by the private sector in which it is the government's policies, strategies

and incentives that provide the direction and impetus for the growth of the sector. The role of government is to formulate national policies and programs, and coordinate the activities of various levels of governance and the private sector. According to Buhalis and Costa (2006), Some notable examples of the ways that IT continues to improve the hospitality and tourism industry, are augmented and virtual reality, blockchain, internet, artificial intelligence and cloud computing etc. The internet has a powerful impact on hospitality and tourism; a customer's first experience with your business is a visit to the website, which includes looking at pictures and reviews from past guests (Mecocci, 2001). It is vital for a business to effectively utilize online advertising, social media, blogs and online purchasing to help convenience their customers, especially when the competitors are doing the same thing.

Computer systems allow communication between larger hotel chains with multiple locations to connect easier and also help keep staff on the same page and make it easier to access information, making your guests experience much better guest requests, housekeeping information and reservations can all be found on one system (Mikalef and Pateli, 2017). Mobile tablets and smart phones have replaced large desktop computers, making them virtually extinct and travelers take some type of mobile device with them on a trip which helps hospitality businesses give customers advise of changes and delays to their reservations, offer deals and adverts by using GPS tracking (Poon, 1993).

Changing Dynamics of Tourism and Hospitality Industry

Internet has changed the dimensions of marketing throughout the globe and has eradicated the old and obsolete practices (Kaur, 2017). In order to excel in marketing, firms considered Digital Media as the one of the most important tool (Kaur, 2017). And further argues that internet has enabled us connect directly with our favorite brands, besides connecting with the users and by following this phenomena, a lot of opportunities have been created to make terms better with the stakeholders. In this Digital era, the frequently and wide use of smart phones and a wide variety of electronic applications have eradicated all the hurdles in the way of communication and has made it limitless (Cunha, 2019). No tourist now gets worried about the place and time while going for tourism because of these instantly usable applications (Cunha, 2019). Tourists in this digital age, do not bother about travelling hurdles because of taking the advantage of convenience provided by all-time available smart phones and applications systems for a random search for occupancy bookings and easy payment of reservations and keep going around their destination points(Cunha, 2019). Success of Tourism industry, along with other marketing strategies, is now also depending upon the digital advancement. Tourists and customers take reviews and feedbacks from digital platforms, their thoughts and decisions are highly impacted due to the level of trust they create in their mind (Alford & Jones, 2020).

Stakeholders' theory is put forward by Alford and Jones (2020), as a modern dimension for online business and affirms that, when a customer purchases a product online, they are likely to be more trusting on that brand which treats their information efficiently. Tourism plays a main role in exploration of historical and natural treasures and thus, is an important economy-supporting activity (González and Bulchand, 2016). Many countries have opened their boundaries and extended them for tourism which also results in social and economic development through creating employment opportunities, establishment of several start-ups and

infrastructure. The international tourism and its extension have been driven from developed societies of the world, developing economies, new and advanced technologies and new forms of business and had elevated it to 5% in 2018 (“International Tourism. Highlights, 2019). This milestone was achieved after two years of UNWTO forecast. This means that tourism is the source of better economic conditions for any country which is responsible for creation of more and more employment opportunities and is the main support for innovativeness and entrepreneurial activities. In other words, Dias, Silva, and Rodríguez, (2020) opined that tourism plays a vital role in the development of different countries and making the lives better and in changing the direction of communities towards modernization. Due to the fast-growing tourism, both developed and developing economies are benefitting from this with a significant rise in revenues (Dias, Silva, and Rodríguez, 2020). Tourism export is continuously rising since last 7 years and it is proving to be very helpful in reducing the trade deficit (Baggio, 2006). However, as the tourism increases, there should also be an increase in the sense of responsibility that the enablers should be considerate about the effective destination management (Charles, Goeldner and Brent 2003). Maintaining the sustainability with tourism is a greater challenge ever faced an increase in volume is not enough but we also need to evolve for giving an adequate quality and value. Tourism sector is expected to be shape up by the involvement of innovation, use of digital access and changes in the mindsets of society.

Uses of Information Technology in Tourism Industry

The tourism system is inevitably influenced by the diffusion of information and communication technologies (ICTs). Tourism is an very information intensive activity; these activities are the generation, gathering, processing, application and communication of information is important for day-to-day operations of the travel and tourism industry (Buhalis, 2003). Tourism destination emerged as umbrella brands and needed to be promoted in the global market place as one entity for each target market they try to attract. The utilization of technology in tourism and hospitality industry has quickened the activity and made the travel process efficient and pleasant. The tourism and hospitality industries have widely adopted information technology (IT) to reduce costs, enhance operational efficiency and most importantly improve service quality and customer experience. IT is increasingly becoming critical for the competitive operations of the tourism and hospitality organizations as well as managing the distribution and marketing of organizations on a global scale. IT helps to meet the demands for timely and accurate information by customers and while the IT diffusion in the tourism and hospitality industries has recently increased at an unprecedented rate (Connolly and Lee, 2006; Singh and Kasavana, 2005).

According to Go (1992), Information technology (IT) is the acquisition, processing, storage and dissemination of vocal, pictorial, textual and numerical information by a microelectronics-based combination of computing and telecommunications. IT is the area of managing technology and spans wide variety of areas that include but are not limited to things such as processes, computer software, information systems, computer hardware, programming languages, and data constructs. IT professionals perform a variety of functions (IT Disciplines/Competencies) that ranges from installing applications to designing complex computer networks and information databases (Longley and Shain, 1985). Information technology has deep implications for economic and social development. The most important benefit associated with the access to the new technologies is the increase in the supply of information. Information is shared and disseminated

to larger audience. Secondly it reduces the cost of production while knowledge is produced, transmitted, accessed and shared at the minimum cost reduction in the transactional costs and a reduction in the degree of inefficiencies and uncertainty. Thirdly it has overcome the constraints of distance and geography (Longley and Shain, 1985).

Internet has transformed the world into a global village which can be navigated at the click of a mouse. It provides potential tourists with immediate access to textual and visual confirmation on destinations throughout the world. The Internet has also become an essential tool in business to business and business to consumer transactions, the distribution of products, networking of business partners is an instantaneous means of accessing knowledge on all kinds of subjects including travel and tourism information. The Internet can be accessed through mobile telephones, cable-television, fixed microelectronics-based combination of computing and telecommunications (Longley and Shain, 1985) IT is the area of managing technology and spans wide variety of areas that include but are not limited to things such as processes, computer software, information systems, computer hardware, programming languages, and data constructs. IT professionals perform a variety of functions that ranges from installing applications to designing complex computer networks and information databases (Buhalis, 2003).

Information technology has deep implications for economic and social development and the most important benefit associated with the access to the new technologies is the increase in the supply of information (Go, 1992) It provides potential tourists with immediate access to textual and visual conformation on destinations throughout the world.

The Role of IT in the Tourism and Hospitality Industry

In simplest terms, travel technology means using technology to plan trips as it helps travel agencies book trips for their customers, together with airline tickets, hotel accommodation, car rentals, and many other travel-related activities. Computer reservation system provided by their hotel and airline partners which they can handle in a matter of minutes (Buhalis, 2003). Every reservation system stores and retrieves real-time data, so that each travel agent can streamline communication with all the relevant parties and automates bookings, payments and back-office tasks for travel agencies and enables consumers to make their online bookings without a travel agent (Buhalis, 2003).

Travel technology is the use of IT in the travel, tourism, and hospitality industry and the application of IT and e-commerce solutions in tourism, travel, and hospitality with the goal of automating travel, saving time, reducing costs, and creating a seamless travel experience for consumers, including before, during, and after a trip (Buhalis, 2003).

Travel technology has revolutionized tourism according to Poon (1993) and Technology has made travel automation possible, making trip planning less time-consuming and exciting for travelers and travel agencies in which one can plan a trip in minutes and can easily book accommodation, tickets, flights and travel itinerary in the palm of one's hand, with the mobile device as the perfect travel buddy. One can have a personalized experience that makes every trip unforgettable. Intangible tourism services cannot be physically displayed or inspected at the point of sale before purchasing and so tourism product is dependent upon information in printed

and audio-visual form. The success of tourism product will depend on extensive and targeted marketing, leading to the growth of new distribution channels. According to Gronroos (1994), the fundamental importance for the successful tourism organization is the ICTs, which enable tourism organizations to differentiate their products and to target the market segment that consists of an individual consumer as websites are increasingly adapted to their users, providing improved personalization for the individual.

In tourism and hospitality industries, the most important relationship is built between the supplier and the consumer, while virtual travel experience is very important in the decision making process as this was confirmed by Sheldon (1997) that information is the life-blood of the travel industry and that effective use of ICTs has a competitive advantage for a tourism destination. A well designed Website of a tourist destination can facilitate the planning process of a tourist, helping him to make a good choice and to have an enjoyable experience. Hence, each tourist destination must have a major Web portal rather than a fragmented number of individual Websites put online by independent stakeholders (tourist agencies, tour operators, hotels, restaurants services). Technological development lead to multichannel, multimedia destination management system, serving the purposes not only for travel information distribution, planning and fulfillment, but also of travel-related education and entertainment which is important for sustainable development of tourism. Sustainable development is defined as “development which meets the needs of the present without compromising the ability of future generation to meet their own needs (World Travel Tourism Commission, World Tourism Organization and European Commission, 1995).

Tourism organizations have to identify niche markets and develop their interactivity with tourist while interactivity is an important aspect in communicating and understanding cultural heritages. Multimedia techniques offer many opportunities which are 3D representation, Virtual Environment and Wireless Appliances which are among the most important techniques (Mecocci, 2001). IT is gradually reshaping the fundamental structure of the industry and can generate the knowledge at the center of a business's competitiveness (Chathoth, 2007; Ham, Kim & Jeong, 2005). Law and Jogaratnam (2005) further suggested that IT can transform the nature of tourism and hospitality products, processes, businesses and competition and that tourism and hospitality organizations that failed to master the right IT systems would find it difficult to direct and manage their information-intensive business thereby damaging their competitiveness.

Tourism and hospitality are social phenomena and the industries associated with them are largely application oriented and as an investment, the adoption of IT are now indispensable components of the tourism and hospitality business, IT serves as a tool for both enabling and inducing change (Lin, Ho and Sambasivan, 2020). As such, IT has recently drawn the attention of tourism and hospitality researchers worldwide, who have disseminated their findings in research journals. Niininen, Buhalis and March (2007), demonstrated that IT supports consumer centricity, with consumers being able to use technology to select and customize their products as well as to personalize their experience.

It is advantageous for tourism and hospitality managers in general and marketing managers in particular to be aware of the recent changes in IT and their relationship with customer services which include ways that IT would continues to improve the hospitality and tourism industry.

Impacts E-Tourism on Marketing Mix

ICTs provide unique opportunities for innovative organizations to redesign tourism products to address individual needs and to satisfy consumer wants. ICTs have also become part of the core product, especially for business travelers who now expect certain facilities to be made available during their trip. The internet and the World Wide Web have revolutionized the promotion and communication functions of tourism. Expedia, eBookers, have emerged and gain a significant market share, propelling a re-intermediation in the distribution channel.

E-Airlines

In 1962, American Airlines introduced its SABRE Computerized Reservations Systems (CRS) to take the place of manual reservations on display boards where passengers are listed and travel agencies had to locate the best routes and fares for their customers in a manual and then telephone for availability, reservation and confirmation before issuing a ticket manually.

The lodging industry is the most under-automated segment of the international travel industry while, Property Management Systems (PMSs) was introduced to facilitate the front office, sales, planning and operation functions. This was achieved by administering a database with all reservations, rates, occupancy and cancellations, thus managing the hotel inventory. Hospitality organizations increasingly use computerized systems to improve their inventory management, communicate with their interaction with consumers and reduce some of their operational costs.

E-Hospitality

ICTs have penetrated hospitality management at a fast pace, integrating the hotel operations, reshaping the marketing function, improving total efficiency, providing tools for marketing research and partnership building and enhancing customer services, while also providing strategic opportunities. In addition, consumers increasingly expect ICT facilities in their rooms; internet access via the television set and data ports has become standard for higher hotel categories. The Internet has improved the hotel representation and reservation processes dramatically. Bookings through the web are particularly convenient for customers who frequent the hotel that provides an efficient and effective communication mechanism (Kaur, 2017). The greater the capacity, number of departments, transactions, arrivals, departures and reservations, the greater the need for technologies to facilitate the processes. Further integration between PMSs and Hotel Customer Relation System has improved efficiency, facilitate control, reduce personnel and minimize the response time to both customers and management requests.

E-Tour Operators

Tour operators need to constantly interact with all their partners, including accommodation and transportation principals, ICTs are also critical for the distribution of tour operators' packages. The introduction of the Internet, Intranets and Extranets as a strategic tools, has a number of benefits for tour operators. The co-ordination and exchange of timely information is important because it allows tour operators to co-ordinate activities, to resolve potential problems and to ensure that customer requirements are communicated to all principals delivering the tourism product. Dias, Silva and Rodríguez (2020) pointed out that ICT play a critical role for tour operators, for example, Kuoni allows consumers to alter their tourism package online and to build their own itinerary by making it possible to extend the trip, change accommodation, meal

plans and add value services such as car rentals, scuba-driving lessons. However, it is quite evident that tour operators will need to shift their focus from the information provision and the reservation mechanism to a strategic role of adding value to the product and the process. Tour operators will therefore need to re-assess their core values and identify specific market segments that they can satisfy in the future.

E-Travel agencies

ICTs have introduced major improvements in the internal organization of travel agencies. By integrating their back-office (e.g., accounting, commission monitoring and personnel) and front Office (customers' history, itinerary development, ticketing and communication with suppliers) functions while travel agencies have achieved significant synergies, efficiencies and cost savings (González and Bulchand, 2016).

As transactions made in branch offices can automatically reported back to the head office, tighter financial control can be achieved. In addition, transactions provide invaluable marketing research data, which can instantly report market movements and aid tactical decisions. At the individual level, Customer Relation Management systems support agencies in tracking the activity of their efficiency, control, competitiveness and storing information in data warehouse which also helps them to develop proactive marketing tools in order to target individual customers with specialized products, thereby increasing the value added services offered to each customer and defend themselves against disintermediation, hence, agencies need to utilize updated ICT on par with the suppliers and customers usage (Buhalis and Costa, 2006).

E-Destinations

Destination management System (DMS) have been used to integrate the entire tourism supply at the destination and their contribution to strategic management and marketing is demonstrated by their ability to integrate all stakeholders at destinations and to reach global market (Baggio, 2006). DMS offers innovative information and sometimes facilities reservations and Destination Integrated Computerized Information Reservation Management Systems (DICIRMS) address entire range of needs and services required by both tourism enterprise and consumers for specific destinations. DICRIMS provide the information structure for communications and business processes between all stake holders, including consumers, principals, distributors and destination marketing organizations (Cooper, Fletcher, Fyall, Gilbert and Wanhill, 2005).

Trends in Travel Tourism Technology

The continuous development of ICTs during the last decade has had important application for the tourism industry; Batinić (2015), identify some of the most notable examples of travel technology to include:

- Hotelmize
- Trawex
- Amadeus
- TravelCarma
- Expedia
- Skift

- TechnoHeaven
 - i. Hotelmize: Uses capital market trading strategies and financial technologies, as well as travel industry experience, to help profit optimization efforts. Hotelmize and similar technology-driven companies and startups are helping the tourist industry implement travel technology
 - ii. Trawex is a travel software development company that offers global B2B travel technology solutions. Trawex APIs seamlessly integrates with any travel portal and enable travelers to make seamless bookings and payments.
 - iii. Amadeus is a travel technology company that provides solutions to everyone in the travel industry for improving travel experiences. Several years ago, it unveiled Navitaire, a VR travel search, and booking experience.
 - iv. TravelCarma offers a suite of travel tech solutions for aggregation, distribution, data integration, and custom UI/UX development. It provides travel agency ERP, travel APIs, B2C/B2B booking engines, CRSs, back office, and more.
 - v. Expedia is an online travel company where you can book flights, hotels, car rentals, cruises, vacation packages, and plan entire trips. It also has a chatbot for booking that works on Facebook Messenger, and an Amazon Alexa app with AI voice recognition. There's also Expedia Travelocity, which has a price-match guarantee.
 - vi. Skift is yet another great example of travel tech, except it's a media company. It uses industry intelligence to research and define travel trends worldwide. It source for daily news and insights on travel tech.
 - vii. Technoheaven is travel Technology Company that provides solutions for travel and tourism business to help them manage day-to-day operations and increase business efficiency. These solutions include travel agency software, tour operator software, B2B/B2C Booking Engine, XML API Integration and more.

Travelers required different information from the internet at different stages of travel. For instance, before departure, the availability of information can affect travel planning while later on they may seek reassurance from review sites that they have selected the right products (Lehto, Kim, & Morrison, 2006). In the Internet era, search engines play an important role in information searching (Ho & Liu, 2005) and the Google search engine in particular is perceived to be the most important tool (Law & Huang, 2006). To better understand the search patterns of customers using a search engine, researchers have analyzed search query formula (Pan, Litvin, & O'Donnell, 2007) and keywords (Pan & Fesenmaier, 2006). Mobile technologies that provide a new and convenient way for tourists to gather information from any location at the destination have been introduced.

Mobile technologies support location-based services, interpretation at the destination and dynamic interaction with tourism suppliers (Buhalis & Law, 2008). Consumers use IT extensively to evaluate alternative travel opportunities and to compare and contrast offerings which potential travelers can identify and evaluate products according to their preferences, filters and requirements. Customers prefer information content to vary across different levels on Destination Marketing Organization (DMO) websites, and that their information needs and behavior change at different stages of travel. In addition, online shopping motivation differs

according to the complexity of the website, with variation depending on the Internet skill levels of users.

Challenges of IT in Tourism and Hospitality

Álvarez, Martín and Casielles, (2007) listed some of these challenges which are:

- i. **Digitalization:** The current level of investments in infrastructure, such as universal access to internet connectivity, is low due to limited government incentives for the development and adoption of ICT, except for a handful of countries.
- ii. **Connectivity and Infrastructure:** Low investments in road and air connectivity and support infrastructure in the region have led to high transportation costs, limited air connectivity, cumbersome border crossings, and poor road conditions.
- iii. **Quality and Standards:** The quality of services varies significantly across the region, largely due to the absence of a common quality standard or regulation. Majority of tourism service providers are small or medium-level enterprises who also have limited access to the latest technology and standards.
- iv. **Skills and Development.** The region lacks a shared strategy for skills development to raise hospitality standards and business practices to improve tourism's efficiency, productivity, and profitability.
- v. **Marketing and Branding:** The region does not have a common marketing strategy that properly packages and promotes the tourism potential of its destinations.

Conclusion

ICT has been transforming the tourism sector all over the world, it empowers visitors to identify, customize, and purchase tourism products and services, it also play a critical role in the competitiveness of tourism organizations and destinations and providing tools for developing, managing, and distributing tourism product offerings globally. Conclusively, ICT provide opportunities for business expansion in all geographical, marketing and operational senses and play a critical role in customer relationship management and the use of Technology in the hospitality and tourism industry which has helped speed up operations and helped the traveling process much more enjoyable, efficient and not only helps large chain hotels, but also useful to Bigger and other smaller companies in the industry Many people prefer to book online when they have previously traveled to a destination in which they feel familiar with the place and although many still treasure their established relationships with travel agents.

Recommendations

The following recommendations were made:

- Tourism require planning and investment, if well planned and invested, can play a significant role not only in creating safe destinations but also in addressing existing challenges in the Nigeria's tourism sector. Its implementation requires close collaboration not only between governments in the country, but also between the public and private sectors.
- Tourism services are predominantly provided by the private sector, government should therefore have policies, strategies and incentives that will provide the direction and impetus for the growth of the sector and coordinate the activities of stakeholders and the private sector.

- Government need to provide adequate support to the private sector so that it can adopt new technologies, such as augmented and virtual reality, internet, artificial intelligence, and cloud computing.
- Governments must play an active role in boosting technology adoption through policy interventions, starting with policy support for the revival of the tourism industry through a combination of incentives to the private sector, such as tax subsidies, funding and skills development

REFERENCES

- Alford, P., & Jones, R.; (2020), The lone digital tourism entrepreneur: Knowledge acquisition and collaborative transfer; *Tourism Management*, 81, 104139.
- Álvarez, L. S., Martín, A. M. D. and Casielles, R. V. (2007) Relationship marketing and information and communication technologies: Analysis of retail travel agencies.. *Journal of Travel Research*, 45(4): 453–463.
- (Baggio, J.; (2006) Complex systems, information technologies, and tourism: A network point of view; *Information Technology & Tourism*, 8(1): 15–29.
- Batinić, A.; (2015)“Role and importance of internet marketing in modern hotel industry”. *Journal of Process Management – New Technologies, International*, Vol. 3, No. 3, pp.34-38, firms in a crisis-hit economy: corporate strategy, employee human capital and R&D capabilities. *International Entrepreneurship and Management Journal*, 1-27.
- Buhalis, D.; (2003) *eTourism, Information technology for strategic tourism management*, Prentice Hall.
- Buhalis, D. and Costa, C; (2006) *Tourism Management Dynamics*, Elsevier Burlington publishers.
- Buhalis, D., and Law, R., (2008) *Progression Information Technology and Tourism Management: 20 years on and 10 years after the internet; The state of the Tourism Research; Tourism Management: 29(4)609-623.*
- Charles R. Goeldner, J.R. Brent R. (2003), *Tourism-Principles, Practices, Philosophies*, Ninth Edition, John Wiley and Sons.
- Chathoth, P.K. (2007) The impact of IT on Hotel operations, service management and transaction Costs: A conceptual framework for full service hotel firms . *International Journal of Hospitality Management: 26(2): 395-408.*
- Connolly, D.J. and Lee, s., (2006) *Developing IT Proficiencies and Fluency in Hospitality students; Journal of Hospitality and Tourism Education*, 18(3): 15-29.
- Cooper, C., Fletcher, J., Fyall, A., Gilbert, D. and Wanhill, S. (2005). *Tourism Principles and practices*, Third Edition, Pearson Education.
- Cunha, M. N. (2019) The tourism journey, from inspiration to post-travel phase, and the mobile technologies. *African Journal of Hospitality, Tourism and Leisure*, 8(5), 1-17.
- Dias, Á., Silva, G. M., & Rodríguez, M. R. (2020) Developing sustainable business models: local knowledge acquisition and tourism lifestyle entrepreneurship. *Journal of Sustainable Tourism*, 1-20.

- González, S., & Bulchand, J. (2016) A model that connects information technology and hotel performance; *Tourism Management*, 53, 30-37.
- Gronroos, C.; (1994) From Marketing Mix to Relationship Marketing: Towards a Paradigm Shiftes in Marketing, *Management Decision* 32:2 (1994), 4–20.
- Go, F. (1992) "The Role of Computerised Reservation Systems in the Hospitality Industry." *Tourism Management*, 13.1: 22-26.
- Ham, S., Kim, W.G. and Jeong, S. (2005) Effect of IT on performance in upscale hotels...*International Journal of Hospitality Management* 24(2): 281-294.
- Hu, C. and Liu, Y., (2005) An exploratory investigation of web-based tourist information search behavior: *Asia Pacific Journal Tourism Research*: 10(4): 351-360.
- Jiang, G., Chen, Y., & Xu, D. (2021) Effects of information quality on information adoption on social media review platforms: Moderating role of perceived risk. *Data Science and Management*, 1(1), 13-22.
- Kaur, G. (2017) The importance of digital marketing in the tourism industry. *International Journal of Research-Granthaalayah*, 5(6), 72-77.
- Law, R., and Hsu, C.H.C., (2006) How do travelers find their hotel web-sites; *Asia Pacific Journal of Tourism Research*; 239-246.
- Law, R., and Jogaratnam, G., (2005) A study of hotel information Technology Applications...*International Journal of Contemporary Hospitality Management* 17(2): 170- 180.
- Lehto, X.Y., Kim, D. and Morrison, A.M., (2006) The Effect of Prior destination experience on on- line information search behavior. *Tourism and Hospitality Research*, 6(2): 160-178.
- Li, X., & Law, R.; (2020) Network analysis of big data research in tourism; *Tourism Management Perspectives*, 33, 100608.
- Lim, S. E., & Ok, C. M. (2021), A meta-analytic review of antecedents of hospitality and tourism firms' performance: A cross-cultural comparison. *Tourism Management*, 86, 104325.207.
- Lin, W. L., Ho, J. A., & Sambasivan, M. (2020), The adoption of technological innovations in a B2B context and its impact on firm performance: An ethical leadership perspective. *Industrial Marketing Management*.
- Longley, D. and Shain, M. (1985), *Dictionary of Information Technology* (2 ed.), Macmillan Press, p. 164, ISBN 0-333-37260-3.

- Mecocci, A.; (2001) 3D Virtual Environment and Wireless Appliances for Visual Arts, Museum Net, Florence, 137–142.
- Mikalef, P., &Pateli, A. (2017) Information technology-enabled dynamic capabilities and their indirect effect on competitive performance: Findings from PLS-SEM and fsQCA. *Journal of Business Research*, 70, 1-16.
- Niininen, D., Buhalis, C. and March, R., (2007) Customer empowerment in tourism through consumer centric marketing (CCM); *Qualitative market Research*, 10(3): 265-282.
- Pan, B., Maclaurin, T., and Crotts, J.C., (2007) Travel blogs and the implications for destination Marketing. *Journal of Travel Research*, 46(1), 35-45.
- Pan,B., and Fesenmaier, D.R., (2006) On-line information search vacation planning process; *Annals of Tourism Research*, 33(3): 809-832.
- Poon, A.; (1993) *Tourism, Technology and Competitive Strategies*; CAB International; Oxford.
Sheldon, P.; (1997) *Information Technologies for Tourism*; CAB International; Oxford.
- Singh, A. T., and Kasavana, M. L., (2005) The impact of IT on future management of lodging operations: A Delphi study to predict key technological events in 2007 and 2027. *Tourism and Hospitality Research*, 6(1): 24-37.
- WTTC/WTO/EC (1995), *Agenda 21 for the Travel and Tourism Industry; Towards Environmentally Sustainable Development*, Oxford.
- UNWTO, (2009) *International Tourism Highlights*, Madrid.

**THE RELEVANCE OF TECHNICAL AND VOCATIONAL EDUCATION IN THE
MIDST OF NATIONAL CHALLENGES IN NIGERIA****By****Rita John Ehiosu****ritajohneiosu@gmail.com / 08039654391****Hassan Alhaji Sani****sanihassan79@yahoo.com / 08098877395****Aliyu Umar Mohammad****alispeaker77@gmail.com / 08066116952****&****Rahila Isyaku****Isyakurahila60@gmail.com / 07033655197*****Abstract***

This paper was written to bring to the fore the relevance technical and vocational education and how it can be used as a strategy to addressing national challenges in Nigeria. Technical and Vocational Education emerged as one of the most effective human resources development strategy that need to be embraced for rapid industrialization. They contribute to the development of the nation economy since it practically covers the field of agriculture, medicine, commerce, engineering, science and technology. As part of its objective, the paper analyzed the state of Technical and Vocational Education in Nigeria; it went further to enumerate the objectives of Technical and Vocational Education in Nigeria. The roles of Technical and Vocational Education in addressing National challenges were also discussed. Furthermore, various problems facing Technical and Vocational Education in Nigeria were discussed. In view of the various challenges, solutions were proffered which is meant to help the nation such that economic development and sustainability be obtained. It equally enumerated some recommendations that will address the menace of Technical and Vocational Education for economic development in Nigeria. Finally, the paper was concluded by calling on the combined efforts of Nigeria Government, individual, group, companies, stakeholder to bring to life the future of Technical and Vocational Education in Nigeria.

Key Words: *Technical Education, Vocational Education, Economic Development, National Challenge*

Introduction

Technical Education can be described as the academic and vocational preparation of students for jobs involving applied art and modern technology. Vocational Education is that aspect of education that provide an individual with knowledge, skills and attitudes required to enter into the world of work and progress in a given occupation. Vocational-Technical Education is can be summarized as that aspect of education which leads to the acquisition of practical and applied skills as well as basic scientific knowledge. The relevance of Technical and Vocational Education cannot be over emphasized because of its impact on the economy of Nigeria. Reason

is that the world is now a global village, a computer age whereby new things are created and pushed to the market. This is as a result of appropriate man power development on Technical and Vocational Education. National challenge denotes a country or a nation's problems. Nigeria is passing through catalogues of challenges which could affect the economy of the country directly and indirect. As revealed by different literatures, the economy of the country in the 80s to 90s was friendly and manageable in the sense that an average Nigerian was able to survive with little or no stress, however, the current national challenges such unemployment and poverty, armed robbery, Human trafficking, kidnapping, banditry, Covid-19, ethno religious crisis, the cases of the Indigenous People of Biafra (IPOB), Boko Haram, threat of climate change and among others have reinforced the urgent need to find lasting solution to economic challenges through avenues such as technical and vocational education.

To address these national challenges, in 2006, the Federal Ministry of Education identified TVET as an instrument to develop, empower, and progress a country's socio-economic development as well as its industrial and technological advances. To buttress this, Orhewere (2006), stated that in human capital framework, general education creates "general human capital" and vocational and technical education creates "specific human capital". In spite of the importance of technical and vocational education in curbing societal menace such as those found in Nigeria, this aspect of education has not been given full and appropriate attention by Nigerian leaders. There is evidence that TVE is still lagging behind in terms of funding, poor technical support, poor teaching strategies, infrastructural development, availability of relevant facilities, inadequate supply of equipment, (Garba, 2021). So the need to know - why these problems and what should be done?

The Objectives of Technical and Vocational Education

The National Policy on Education (2014) defines Vocational Education as "that form of education which is obtainable at the technical colleges. This is equivalent to the senior secondary education but designed to prepare individuals to acquire practical skills, basic scientific knowledge and attitude required as craftsmen and technicians at sub – professional level." The Policy also enumerated the objectives of vocational and technical education in Nigeria as follows: -

- To provide trained manpower in the technology, advanced craft, and technical levels
- To provide the technical knowledge and vocational skills necessary for the agricultural and economic development;
- To provide people who can apply specific knowledge to the improvement and solution of environmental problem for the use and convenience of man;
- To give an introduction of professional studies in engineering and other technologies;
- To give training and impact the skill leading to the production of craftsmen, technicians and other skilled personnel who will be enterprising and self – reliant and
- To enable our young men and women to have an intelligent understanding of the increasing complexity of technology. The above goals are intended to make vocational and technical education more practical, functional and job oriented. If all these goals were to be property implemented, they could bring about the desired technological development
- It is also a targeted form of skill development for youths

TVE Laws and policies are master keys to unlocking the future. So, the author's view as for the attainment of the above stated objectives is that aims and objectives should not just be written but be implemented. Also, evaluation and monitoring team should be created to close the gap between TVE and the factor threatening its progress.

Roles of Technical and Vocational Education in Nigeria

In Nigeria, Technical and vocational education was previously not seen as fundamental to the economic development or for the national development, but for school dropouts and not well to do individuals. According to Nwachukwu (2014) technical and vocational education has the economic role of providing qualified manpower by changing the individual and enabling the individual to utilize complex technology. Beside provision of skilled manpower, the need for technical and vocational education is relevant because of the changing societal needs (dynamic society) for technological advancement. Balogun (2013) asserted that in industrialized country young people like the secondary school leavers go through technical and vocational training to prepare them for the world of work and this form one of the greatest investment for sustainable economic development.

Technical and Vocational Education is one of the most appropriate tools for employment, job creation. It has the backbone to take care of all problems associated with unemployment and our nation's economy. It equips graduates with skills in area of their trades. It prepares people for the world of work and this form one of the greatest investments for sustainable economic recovery and development. It can promote political stability. It gives individual opportunity to become industrialist in particular field. It tries to remove the inadequacies of the literary white-collar job oriented education. Functional Technical and Vocational Education is very necessary to actualize the economic and Technological growth of any country. It brings positive economic changes for rural dwellers. (Shola, 2021).

The floating of poverty alleviation measures both economic and humanitarian in Nigeria such as Operation Feed the Nation, Green Revolution, the Directorate of Foods Roads and Rural Infrastructure, National Directorate of Employment and aforementioned agencies are TVET based. Olayiwola (2021). This is in tandem with economic growth and employment creation for all that is key to poverty eradication which TVET provides. No nation can move forward technologically, industrially and economically without developing a strong partner initiative in the creation of wealth, poverty reduction and employment generation through technical and vocational education and training.

From the author's point of view, poverty and unemployment are the major challenges in Nigeria, vocational and technical education are the major strategy for reduction of unemployment and poverty. Tyowuah (2019) identified technical and vocational education and training objective as the urgent need to train the workforce for self-employment and the necessity to raise the productivity of the informal sector. Some developing countries governments are renewing efforts to promote Technical and Vocational Education and Training (TVET) knowing fully well that development of skills enhances productivity and sustains competitiveness in the global economy. Vocational and technical education and training thus plays an orientation role towards the world

of work and its curriculum emphasizes on the acquisition of such employable skills, which is a fundamental necessity for driving the industrial and economic growth, and it is a key to building this type of technical and entrepreneurial workforce which Nigerian needs to create wealth and emerge out of poverty.

Therefore, vocational and technical education is a means through which training needs of learners from different socio-economic and academic backgrounds are responded to, thus preparing them for self-employment and sustainable livelihoods. The poor and the vulnerable in the society can therefore benefit from vocational and technical education. Skill training enhances productivity and sustains competitiveness in the global economy. Worldwide countries are renewing efforts to promote technical and vocational education and training. This is because it is the only way to prepare people of workable age for the world of work, which reaches out to the marginalized and excluded groups to engage them in income generating livelihoods. High rate of unemployment has been leading to increasing poverty and serious social problems in Nigeria, (Ayodere, 2006). Ayodere (2006) added that these problems can be addressed using the right form of education which is vocational and technical education. Vocational and technical education holds the key to Nigeria becoming technological developed, internationally relevant and competitive in the world market. It is known that technology is the most effective means of empowering the citizenry to stimulate and sustain national development, enhance employment, improve the quality of life, hinder poverty, limit the incidence of social vices factored by joblessness and promote a culture of peace, freedom, and democracy, which are indices of unity and national development. Yet vocational and technical education has not gained its prominence in the country, (FME, 2000) cited in Chen and Magaji (2011).

Challenges of Technical & Vocational Education in Nigeria

The situation of technical and vocational education in Nigerian is very worrisome as a result of the certain challenges identified by several authors such as Okoye (2016) and Uwaifo (2015) where they observed that the good intention of successive Nigerian government about TVE programmes are still fraught with a lot of challenges which include:

- **Inadequate Facilities:** Most technical and vocational department in some Nigerian Universities lack space for workshop and laboratory talk less of having facilities in the workshop and laboratory (Ojimba, 2012). Some of the institutions where these facilities were inadequately provided when it was established, were now obsolete. The inadequate performance of TVE graduates has led to the country to employ technicians and craftsmen from other West African Countries to man in our industries, (Okoye, 2016).
- **Brain Drain:** Defined as the movement of technical teachers and lecturers of technical education which are very much needed for the socio-economic and technological development of Nigerian from one university to the other professions where they feel will offer them better conditions of service. Okoye (2016), added that about 45 percent of Nigerian professionals including technical educators have left the Nigerian shores over the years. Also, a lot lecturers from Nigeria tertiary institutions have continued to migrate each year, particularly to Europe, America and other Africa counties
- **Inadequate Funding of TVE:** Government inadequate commitment to technical education in the area of funding has weakened technical education in Nigeria as rightly pointed out by (Momoh, 2012; Mohammed, 2001). Momoh (2012) emphasized that a direct consequence of

this is that while the number of technical education institution is dwindling that of general education is bound to fall apart.

- **Staff Training and Retention:** In academic, the training of staff is a continuous exercise so as to ensure consistency in the improvement of their product. These academic staff training could be local or international. To study within the country is cheaper, overtime, some staff who are opportune to study abroad hardly want to retain their work or come back to their respective countries after gathering wealth of knowledge. To buttress this, Ojimba (2012) pointed out that the salary and service benefits paid to technical education teachers in Nigeria is about the lowest in the world. This led them to migrate to other countries for better pays.
- **Nigerian Value System;** In developing countries and Nigeria to be specific, people value university education more than technical education whereas in developed nation, they value those with technical knowledge and vocational skills than those with university education with little or no skill. Due to this discrimination, parents and secondary school leavers prefer to go to university, according to Nworlu-Elechi (2013), secondary school leavers and their parents prefer university education to technical education
- **Apathy of Political Office Holders/Law makers:** ASUU strike is a clear evidence that education generally and technical and vocational education in Nigeria is grossly neglected by the Nigerian government. If this negative trend and attitude is not looked into especially in the aspect of TVE Nigeria will remain a depended and technological backward nation. According to Okoye (2016), no nation can prosecute a war without an army. So! Nigeria cannot develop without well-equipped TVE
- **Political Instability:** Policy implementation in education and other sectors of the economy have been negatively influenced by frequent changes in government and policies. Policy somersaults and inconsistency is a fatal problem. Professor Ajayi, one-time Provost of Federal College of Education (FCE) Osiele, Ogun State in Nigeria made this observation where he state that within the eight years (1991-1999) that I served as Provost, the nation passed through five different regimes (Babangida till 1993, Shonekan for less than four months in 1993, Abacha 1993-1998, Abubakar 1998-1999, Obasanjo 1999-2007). Within this period, I had to operate under eight Ministers of Education. The same thing happened at the state level. Each of the Presidents, Ministers, Governors and Commissioners had their own different conceptions and policies on education that they tried to implement during their tenure. With such instability in the system of governance, coupled with constant changes in "Ministers of" "Ministers for" and "commissioners for," one should not be surprised at the level of the crises the nation's education system has witnessed over the years and the inconsistency and often contradictory nature of the educational policies and practices. It is one step forward and two steps backward. We simply have not implemented it well and now we have picked another one (Odukoya, 2013).
- **Curriculum of Technical Education:** It has been observed that curriculum with practical is designed in such a way that the theoretical aspects are given more percentage than the practical aspects. Olunloyo 2002 asserts that one of the issues confronting the design of appropriate curriculum for technical education is preparing students for the shift from the Fordist to information and communication technology (ICT) paradigm in technological practice. Okoye (2016) added that, the low pace of industrialization and technological growth in Nigeria can be attributed to the widening gap between science and technology as a result

of the inability of technical education to adequately utilize the scientific ideas to promote technology

- **Difficulty in securing loans from government and other financial institution:** Financial institution finds it difficult to give loans to TVE entrepreneurs for fear that they may not be able to pay back. Also, the interest rate of collecting loan is so huge that they will not be able to afford it. This discouragement kills the ideas of TVE entrepreneurship (Olayiwola, 2021).

Recommendations

With regard to the problems encountered by TVE the following overall recommendations are made:

1. There should be constant overhauling of manpower by government, individuals and stakeholders through Technical and Vocational Education
2. Adequate resources should be allocated to technical and vocational education. Inadequate funds affect the provision of essentials such as well – equipped laboratories and workshops, relevant textbooks and training manuals.
3. Government should establish technical and vocational centers for learners whose aptitude prefers handwork
4. Vocational and technical education requires skilled and proficient teachers. Teachers preparation should be given a priority attention. There is the need for regular in – service training for teachers of technology to upgrade their skills. Periodical industrial training for teacher is a sine-qua-non in other to keep them abreast with the technological changes in the industry.
5. Adequate and constant funding of the program is important for the smooth running of the program.
6. Policies on technical and vocational education should not be just paper work but be implemented.
7. The practical aspects of TVE must be given required attention by those that are involved in the programme.
8. There is the need for our technical institutions to establish good relationship and linkages with similar institutions abroad as this will promote cross – fertilization of ideas and enhance technology transfer. By doing this the technical institutions will have access to new developments, exchange programmes and other numerous benefits available at those institutions whose technical programmes are well developed.
9. The teachers handling technical and vocational education should be motivated and instructional materials should be made available by government.
10. When there is collaboration between technical institutions and industries, the relationship will enable the parties appreciate and understand their needs and proffer the right solutions for the benefits of the society
11. The curriculum taught in our vocational education institutions should be reviewed to meet the demands of the labour market. In addition, the curriculum of primary and secondary schools should lay emphasis on Technical and Vocational Education to benefit those who may not proceed to tertiary level.
12. There is need to start the teaching of industry-based increase employment opportunities for school leavers of vocational and technical institutions. It will also provide ample opportunities for school dropouts.

13. In order to have access to development and new ideas, government should link our technical institution with similar institution abroad as this will aid and enhance technology transfer
14. The government should urgently remove the dichotomy that exists between University and technical institution. Polytechnic institutions should be made to award degrees. This will not only attract more qualified students to vocational/technical education but will also encourage exchange of qualified lecturers/instructors between the two systems.
15. It is important to monitor and regulate the informal sector that produces most of our artisans. Such training outfits can be licensed to certify trainees at the end of the apprenticeship period on behalf of the government. Through this way, charlatans can be easily identified and separated.
16. A welltimed TVE program may help Nigeria to improve its economic growth, which may then aid social equity and freedom; the country urgently needs to take substantial steps (such as, increasing budgets, preparing modern course curriculum etc.) if it wants to develop TVE education.
17. To progress well in the face of increasing global competition, it is essential to provide modern up-to-date technological knowledge to students.
18. There should be increase in public enlightenment about the need for skill acquisition programme for poverty alleviation

Conclusion

The scope of this paper was not easy to present a full picture of TVE for Nigeria but it was possible to examine and discuss the problems of Technical and Vocational Education, in Nigeria, National challenges confronting the nation and the roles of technical and vocational education in Nigeria. The following discussion represents some concluding remarks on the topic.

Non-acquisition of saleable skills has been a major factor in developing countries and high rate of poverty, unemployment and other social vices. For many citizens of this nation, these problems are their daily challenges, when they cannot feed, clothe or shelter themselves or their immediate family. They surely cannot realize their full potentials, since the need for survival is so overwhelming and a good number of people have fallen victims to the pressures of survival and have ended up as kidnapers, arm robbers, bandits, prostitutes, scammers, militants fighting for whatever that gives them a hope for survival. The failure of the government to reposition the vocational and technical education programme with emphasis to empower the teaming youths for self-actualization and development to satisfy the basic social needs, added these problems. Therefore, the need for educated and skilled workers with the citizens of the country at the core becomes imperative and VTE as the type of education with these values should be recognized and taken serious for sustainability and economic development to strive. Finally, with the role played by TVE, if TVE is properly harnessed it may achieve its potentials as a tool to alleviate the challenges facing TVE and the nation

REFERENCES

- Adamu, S. Lasisi, S.A. (2021). Tackling Unemployment and Insecurity Challenges Through Effective Technical and Vocational Education and Training in Nigeria. *Bichi Journal of Vocational Education* 2(2): 23-29.
- Adegoke, N. (2005): Youth Unemployment and Security Challenges in Nigeria. *Asian Journal of Humanities and Social Studies* 3(1): 41 – 45.
- Ayodele, J.B. (2006). *Obstacle to entrepreneurship development in Nigeria*. Asaba Publication.
- Balogun, B. I. (2013): Quality Business Education in Nigeria: The Role of Educational Administrators. *Sardauna Journal of Education*, 4 (1): 132 – 136.
- Dopemu, O.A., Rita, J.E., Innocent, E.O., Egeonu, C.U. (2021). TVET and Entrepreneurship Development in Nigeria. The Holistic Way Forward. *Journal of Vocational and Technical Educators (JOVTED)*, 6(2): PP 95-102.
- Eek, C.J., LayField, K.D., Dibenedetto. C.A., & Gore, J. (2021). School – Based Agricultural Education Teachers Competence of Synchronous. Online Instruction Tool During the Covid – 19 Pandemic. *Journal of Agricultural Education* 62 (2) 137-147.
- Federal Ministry of Education (2000).
- Garba, S. (2021). Technical Vocational Education and Training: Fulcrum for Innovation, Technology Transfer and Poverty alleviation in Nigeria. *Bichi Journal of Vocational Education* 2(2).
- ILO, (2012) Africa. No real growth without Jobs World Economic Forum on Africa, Addis Ababa Ethiopia.
- Omoh, A.O. (2012). Revitalization of Technical Education in Nigeria as a vehicle for transformation. *Proceedings for COREN 21st Engineering Assembly*. 53-81.
- National Policy on Education (2014). FRN 6th Edition.
- Nwachukwu, P.I (2014): Poverty Reduction through Technical and Vocational Education and Training (TVET) in Nigeria *Developing Country Studies* 4 (14). Online.
- Nwokike, J.J. Nwokike F.O. and Alio, A.N (2019). Technical and Vocational Education and Training as a panacea for poverty reduction in Enugu State. *International Journal of Vocational and Technical Education Research*, 5(4):16-26.
- Nworlu-Elechi, O. (2013), “Technical and Vocational Education for National Transformation” *Proceeding of 1st ASUP Zone D National Conference* Pp 21-37.

- Odukoya, D. (2013). Formulation and implementation of educational policies in Nigeria. <http://www.slideshare.com> Accessed 8/3/2014.
- Ojimba, D.P. (2012). “Vocational and Technical Education in Nigeria: Issues, Problems and Prospects” Dimensions. *Journal of Education and Social Research* Vol. 2(9).
- Okafor, E.E. (2005). Executive corruption in Nigeria: A Critical Overview of its Socio-Economic Implications for Development. *Africa Journal of Psychological Studies*,1(8):141-146.
- Okafor, O.E., Onuka, A.U. & Chikezie, I. (2017). The youth in vocational technical education: A tool for sustainable development in Nigeria. *Journal of Association of Vocational and Technical Education of Nigeria*. 22(2) 234-240.
- Olayiwola, M. A. (2021): Technical Vocational Education and Training (TVET): A Fulcrum for Innovation, Technology Transfer and Poverty Alleviation. *Bichi Journal of Vocational Education* 2 (2) Pp 6 – 7.
- Okoye, R. and Maxwell, O. A. (2016); Technical and Vocational Education in Nigeria: Issues Challenges and a way forward. *Journal of Education and Practice*. ISSN 2222 (paper) ISSN2222-288X (online) 7 (3).
- Uwaifo, V.O (2015). Challenges of Technical and Vocational Education and it’s Sustained Participatory Compliance in a developing Economy. *Journal of Nigerian Association of teachers of Technology*,10(1)88-94.
- Tyowuah, Michael, N and Chen, J. O. (2019). The importance of vocational and technical education in Nigeria’s development. *International Journal of Vocational and Technical Education Research* Vol.5, No.5, pp.34-41.

EFFECT OF SOCIAL SKILLS TRAINING COUNSELLING TECHNIQUE ON IMPULSIVE BEHAVIOUR AMONG PRIMARY SCHOOL PUPILS IN UNGOGO LGEA OF KANO STATE, NIGERIA

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Abstract

The study investigated the effect of social skills training counselling technique on impulsive behaviour among primary school pupils of Ungogo LGEA of Kano State, Nigeria. Quasi-experimental design in form of one group pre-test-post-test design only was employed. The population of the study comprised all primary five pupils who exhibited symptoms of impulsive behaviour in Ungogo LGEA of Kano State, Nigeria as measured by 'Impulsive Symptoms Checklist (ISC), 161 impulsive pupils were identified. Based on the identified impulsive students, a sample of forty (40) pupils were selected purposively as the sample size. The instrument was construct validated while test re-test method was used to establish the stability over time of the instrument with an index of .613. The research question was answered using frequency and percentage, while paired sample t-test was used to test the first hypothesis, and t-test for independent sample for the second hypothesis. The findings of the study revealed that the prevalence of impulsive behaviour among primary five pupils of Ungogo LGEA of Kano State, Nigeria was high at 58%. The study found significant effect of SST on impulsive behaviours among primary five pupils in Ungogo LGEA in the pretest and post-test scores of the participants. Therefore, the study recommended that counsellors and teachers should employ the use of social skills training counselling technique on students who exhibit symptoms of impulsive behaviour instead of using normal school intervention.

Keywords: *Social Skills Training, Impulsive Behaviour and Counselling Technique*

Introduction

Impulsive behavior is a behaviour which is attached Attention Deficit hyperactivity Disorder (ADHD). Attention Deficit Hyperactivity Disorder is a disorder characterized by inattention, hyperactivity, and impulsivity. The present study is concerned with children who exhibit the symptoms of impulsive behavior in schools, impulsive behavior is characterized by 'often blurts out answers before questions have been completed, often has difficulty awaiting turn, often interrupts or intrudes on others' (Diagnostic and Statistical Manual of Mental Disorders, DSM-

IV, 2013). These behaviours when exhibited in classroom usually prevent teachers and the pupils to enjoy smooth teaching and learning process.

Pupils who exhibit symptoms of impulsive behaviour on their part find it difficult to concentrate and understand, because they often find it difficult to wait for their turn. Also, they tend to disrupt the class not and giving other pupils the full opportunity to listen carefully to the lesson delivered by the teachers. In addition, it is believed that children with this behavior have a higher probability to be backward in their performance. However, for children to succeed, they must learn to control themselves, not to disrupt the atmosphere of the classroom.

Therefore, it is important to design an effective and reliable classroom intervention to help the pupils learn how to control their behavior and be more effective in classroom and improve their academic performance especially those who show the symptoms of impulsive behavior. In this aspect, a counselling technique may be one of the ways to help such children, specifically social skills training counselling technique. Social skills training counselling technique (SST) is a form of behaviour therapy used by teachers, therapists, and trainers to help persons who have difficulties relating to other people (Susan, 2013).

The present study, explored the effect of social skills training counselling technique on impulsive behaviour among primary five pupils in Unogogo Local Government Education Authority (LGEA), Kano.

Statement of the Problem

Impulsivity is often accompanied by symptoms such as restlessness, hype-activity, problem doing quiet activities, problem with executive function talking excessively, and fidgeting; Impulsivity can less commonly be related to medical problems that interfere with an individual's cognitive function such as stroke or dementia. Primary school pupils are among the categories of the students facing the problem of impulsive behavior because the school has become an essential environment that cannot be separated from the child's life, those children suffering from impulsive behavior in most cases do not really perform well in school not because they do not know but because of their anxiousness to do something without thinking whether it is right or wrong. Despite the several measures taken by teachers, parents and counsellors still the problems continue persisting among the students this is the reasons why the researcher employed the effect of social skills training Counselling technique on impulsive behaviour among primary five pupils in Unogogo Local Government Education Authority (LGEA), Kano.

Objectives of the Study

The objectives of this study are to find out:

1. To identify the prevalence of impulsive behaviour among primary five pupils in Ungogo LGEA, Kano, Nigeria
2. To identify the effect of social skills training counselling technique on the symptoms of impulsive behaviour among primary five pupils in Ungogo LGEA, Kano, Nigeria.
3. To identify the gender difference in the post-test mean scores on impulsive behavior among primary five pupils in Ungogo LGEA, Kano, Nigeria.

Research Questions

The following research questions were answered.

- What is the prevalence of impulsive behaviour among primary five pupils in Ungogo LGEA?
- What are the effect of social skills training counselling technique on the symptoms of impulsive behaviour among primary five pupils in Ungogo LGEA, Kano, Nigeria?
- Is there any gender difference in the post-test mean scores on impulsive behavior among primary five pupils in Ungogo LGEA, Kano, Nigeria?

Research Hypotheses

The following hypotheses were formulated and tested at 0.05 level of significance:

1. There is no significant effect of social skills training counselling technique on impulsive among primary five pupils in Ungogo LGEA, Kano, Nigeria.
2. There is no significant Gender difference in the post-test mean scores on impulsive behavior among primary five pupils in Ungogo LGEA, Kano Nigeria.

Literature Review

Attention Deficit/Hyperactivity Disorder (ADHD)

Attention deficit/hyperactivity disorder (ADHD) is a developmental disorder of childhood that shows a persistent pattern of inattention and or hyperactivity-impulsivity. Children with ADHD will frequently exhibit anti-social Behaviour, which could lead to major difficulties with achievement in school, despite the fact that they may not display formal learning disabilities. The onset of ADHD is in early childhood most times before age of seven (7). ADHD may affect all aspects of a child's life; the impact may not only be on the child, but also on the parents, siblings, and situations. ADHD is a particularly serious problem because children with the core difficulties of inattention, hyperactivity and impulsivity may develop other range of secondary academic and relationship problems. Attention difficulties may lead to poor attainment in school. Impulsivity and hyperactivity may lead to difficulties in choosing and maintaining appropriate peer relationships. It is difficult for a child with these attributes to obey the rules as regards to parental expectations and so they often become entangled in conflicting relationships with their parents. ADHD may continue till adolescence or even adulthood Abikwi (2008).

Social Skills Training (SST)

Social skills training (SST) is a form of behaviour therapy used by teachers, therapists, and trainers to help persons who have difficulties relating to other people (Susan, 2013). Social skills training explained by Mazur, (2009) as a method of helping people who have problem interacting with others. Clients learn basic social skills such as initiating conversations, making eye contact, standing at the appropriate distance, controlling voice volume and pitch, and responding to questions. The therapist first describes and models the behaviour. The patient or client practices the behaviour in skills or role playing exercises. The therapist watches the exercises and provides contractive criticism and further modeling. Therapists often conduct this kind of training with groups of people with similar problems. Social skills training often can help people with schizophrenia function more easily in public situations and reduce their risk of relapse or re-hospitalization.

Recent studies have shown that the technique is effective in addressing different behavior problems which was revealed in their findings, such as study conducted by Dungurawa and Ahmad (2019) studied the effect of social skills training counselling technique among pupils of staff model primary school of Bayero University, Kano, Nigeria. The study employed pre-test-post-test quasi-experimental design. The sample was 30 pupils drawn using Impulsive Symptom Checklist (HSC). Findings revealed that the prevalence of impulsive behavior among primary five pupils of staff model primary school of Bayero University, Kano, Nigeria is high. In addition, the finding also showed that there is significant effect of social skills training counselling technique on hyperactive pupils of staff model primary school. Meral and Abide (2017) studied the effect of Social Skills Training Programs on the social skills of pre-school children and the relationship between their social skills and temperament were investigated in this research. The subjects of the study were the children who are still in the pre-school education of public institutions. Results of the research showed that the mean post-test scores of the children who participate to Social Skills Training Program are higher than the mean post-test scores of the control group children's scores; as a result, of positive effect of the implemented training was observed.

Methodology

The study employed quasi experimental design in form of pre-test-post-test design only. Quasi-experimental design is a design that does not provide full control of subjects and does not include random assignment of subjects. In this design new teaching strategies are carried out as effective practices in studies that measured one group with a pretest, implemented a treatment manipulation, and then measured the same variable, as was measured with the pretest, with a post-test (Cohen, Manion, & Morrison, 2007).

The population of the study comprised of all primary five pupils of Ungogo LGEA, based on the data obtained, ungogo LGEA has sixty three (63) primary schools with the population of (4,201) primary five students, based on the above population a total of three hundred and fifty-seven (357) instruments was administered to the respondents as suggested by Researchers Advisor (2006) table of determination of sample size, based on the instruments administered a total number of one hundred and sixty one (161) impulsive pupils were identified from the public primary schools in Ungogo local government education authority, Kano, Nigeria. The pupils were identified using research assistant and the instrument for the study that is 'Impulsive Symptom Checklist' (ISC).

A sample of forty (40) impulsive pupils who exhibited the symptoms of impulsive behavior were selected for the study comprising of 25 males and 15 females from the identified impulsive pupils. Purposive sampling technique was used in drawing up the sample of the study. In this sampling technique researchers have the opportunity to select the population of the participant based on their opinion. Gay (2009), stated that purposive sampling technique is a technique which involves the researcher deciding to choose or use certain objects or person as a research participant, due to his experience in relation to the nature of the research. Proportionate sampling technique was also used for the distribution of the sample size. The selection of forty (40) sample was based on the idea of Gay (2009) who recommended that a minimum of thirty (30).

Table: 1 Distribution of the Sample Size

S/N	Schools	No of identified	Sample Size
1	Rimin Gata special pri sch	87	22
2	Rijiyar Zaki special pri sch	74	18
Total		161	40

Source: Field work (2021)

The research instrument used for this study was a checklist titled 'Impulsive Symptom Checklist' (ISC). The scale was extracted from 'Attention Deficit Hyperactivity Symptoms Checklist' (ASC) for ADHD which contains 18 items as contained in the DSM-V published by American Psychiatric Association (APA, 2013). The instrument was validated through construct validity with the help of experts in the field Guidance and Counselling, Bayero University, Kano. In the process, none of the items in the scale was discarded or changed.

To obtain the reliability of the instrument, a pilot testing was carried out to ascertain the stability of the 'ISC' through test-re-test method. The data collected was analyzed using Pearson Product Moment Correlation the index of (.613) was obtained. Three phases of data collection were used in the study that is pre-treatment phase, treatment phase and post-treatment phase.

Results

The Data collected were analysed using simple frequency and percentage for the first research question, then mean and standard deviation for the second and third research questions, one sample t-test was used for hypothesis one and independent sample t-test for the second hypothesis.

Answers to Research Questions

Research Question One: What is the prevalence of impulsive behaviour among primary five pupils of Ungogo LGEA, Kano, Nigeria?

Table 2: prevalence of impulsive behaviour

Level	N	Percentage
High	207	58%
Low	150	42%
Total	357	100%

Source: Field work (2021)

Table 2 above shows that, the percentage of prevalence of impulsive behaviour among primary five pupils is higher than their low-level counterparts as indicated by 58% against 42%. This means the prevalence of impulsive behaviour among primary five pupils in unogogo LGEA was high at 58% as indicated in table 2 above.

Research Question Two: What are the effect of social skills training counselling technique on the symptoms of impulsive behaviour among primary school pupils in Ungogo LGEA, Kano, Nigeria?

Table 3: Mean score and standard deviation between pretest and post-test group.

Group	N	Mean	SD
Pretest	40	6.73	1.53
Posttest		3.97	1.29

Source; - field work (2021)

The descriptive statistics above showed the pretest mean scores 6.73 and standard deviation of 1.53 are higher than the posttest mean scores of 3.97 and standard deviation of 1.29. This indicated that social skills training counselling technique has effect in reducing impulsive behaviour among primary school pupils in Ungogo LGEA, Kano, Nigeria. This is because the lower mean the effectiveness of the treatment given.

Research Question Three: Is there any gender difference in the post-test mean scores on impulsive behavior among primary five pupils in Ungogo LGEA, Kano, Nigeria?

Table 4: Mean score and standard deviation difference between boys and girls.

	Gender	N	Mean	SD
Post test	Boys	25	4.05	1.395
	Girls	15	3.83	1.115

Source; - field work (2021)

Table 4 above shows the post-test mean scores of the respondents based on gender. Twenty five (25) representing boys respondents with mean score of 4.05 and standard deviation of 1.395 while the remaining fifteen respondents were girls students with mean scores of 3.83 and standard deviation of 1.115. Therefore, the difference in the mean score of boys and that of the girls respondents is not statistically significant. Hence, social skills training counselling technique is not gender sensitive.

Hypotheses Testing

HO₁: There is no significant effect of social skills training counselling technique on impulsive pupils among primary schools students in Ungogo LGEA, Kano, Nigeria.

Table 5: one sample t-test pre-test post-test scores

	N	Mean	SD	t-cal.	Df	P-Value
Pre-test	40	6.73	1.53	17.725	39	.000
Post-test		3.97	1.29			

Sig at P 0.00 ≤ 0.05

Table 5 above presented the calculated t-value of 17.725 with p-value .000, tested at 0.05 level of significance and degree of freedom 39. From the table, the p-value .000 is less than 0.05 level of significance, which means the null hypothesis that states that 'there is no significant effect of social skills training counselling technique on impulsive pupils in Ungogo LGEA, Kano, Nigeria' is rejected. Meaning, the two mean scores differs in favour of the posttest mean scores as measured by ISC.

HO₂: There is no significant difference in the post test mean scores on impulsive behavior between boys and girls primary school pupils in Ungogo LGEA, Kano, Nigeria.

Table 6: Difference in the effect of SST between male and female impulsive pupils

Gender	N	Mean	SD	t-cal.	Df	P-Value
Boys	25	4.05	1.395	.455	38	.653
Girls	15	3.83	1.115			

NS at $.653 \geq 0.05$

Table 6 above presented the calculated t-value of .455 and p-value .653 with degree of freedom 38, based on the result, the P-value .653 is greater than α level 0.05. This implies that the null hypothesis which states that 'there is no significant difference in the post test mean scores between male and female impulsive pupils in Ungogo LGEA, Kano, Nigeria' is accepted, meaning, no significant difference was observed between boys and girls participants exposed to social skills training counselling technique on impulsive behavior.

Summary of Findings

Below is the summary of findings:

4. That the prevalence of impulsive behaviour among primary five pupils in Ungogo LGEA, Kano, Nigeria is high at 58%.
5. There is significant effect of social skills training counselling technique on impulsive behavior among five pupils in Ungogo LGEA, Kano, Nigeria.
6. There is no significant difference in the post test mean scores on impulsive behaviour between boys and girls primary five pupils in Ungogo LGEA, Kano, Nigeria.

Discussions

The present study revealed that the prevalence of impulsive behaviour among primary five pupils in Ungogo LGEA, Kano, Nigeria is high at 58%, this finding is in line with the related study conducted by Afeti and Harrenson (2017) studied the prevalence of ADHD and its effect on school performance among primary school pupils in the Hohoe municipality of Ghana. The study employed a cross-sectional descriptive study that included 400 primary school pupils in the Hohoe Municipality of Ghana. The results revealed the overall prevalence of ADHD to be 12.8%. The males had a higher prevalence (14.4%) compared to the females (10.5%). For the subtypes, the prevalence was 8.0% for attention-deficit disorder, 8.5% for hyperactivity disorder and 3.8% for the combined subtype. In terms of school performance, the results showed that there was significant difference in the school performance between ADHD-positive pupils and the negative status pupils among the various core subjects. It concluded that Attention-deficit/hyperactivity disorder was quite prevalent among primary school pupils in the Hohoe.

The finding in hypothesis one revealed that there is significant difference in the pre-test and post-test scores of the pupils exposed to the treatment using social skill training counselling technique. The study is also in line with Dungurawa and Ahmad who studied the effect of social skills training counselling technique among pupils of staff model primary school of Bayero University, Kano, Nigeria. Findings revealed that the prevalence of impulsive behavior among primary five pupils of staff model primary school of Bayero University, Kano, Nigeria is high. Another finding showed that there is significant effect of social skills training counselling technique on hyperactive pupils of staff model primary school.

In addition, the study is in line with Kilic and Abide (2017) who studied the effect of Social Skills Training Programs on the social skills of pre-school children and the relationship between their social skills and temperament were investigated in this research. The subjects of the study were the children who are still in the pre-school education of public institutions. Results of the research showed that the mean post-test scores of the children who participate to Social Skills Training Program are higher than the mean post-test scores of the control group children's scores; as a result the positive effect of the implemented training was observed. It was observed that there is a significant negative correlation between social skills-timidity and temperament-inhibitory control scores; social skills-communication and temperament-activity level scores; temperament-impulsivity and social skills-discord and social skills scores.

The last finding of the study revealed that no significant difference in the effect of social skills training counselling technique on impulsive behaviour between boys and girls pupils was found in ungoro LGEA, Kano, Nigeria, this finding is against with the study of Kolawole (2011) on the effect of enhanced thinking skills (ETS) and social skill training (SST) in fostering interpersonal behaviour among Nigerian adolescents, who reported that ETS and SST did better with females compared to males.

Conclusions and Recommendations

The present study investigated the effect of social skills training counselling technique on impulsive behavior among primary school pupils in Ungogo LGEA, Kano Nigeria. Based on the outcome from the study, it was concluded that primary five pupils in Ungogo local Government Education Authority, Kano, Nigeria have shown high level of impulsive behaviour.

Likewise, it was also concluded that social skills training counselling technique is an effective technique in addressing impulsive behaviour among primary school pupils in Ungogo LGEA, Kano, Nigeria. This is observed clearly from the impulsive symptoms mean scores in which significant difference was observed between the pretest and posttest mean scores. Finally, it can be concluded that, the technique can be applied among primary school pupils who demonstrated the symptoms of impulsive behavior irrespective of their gender. Since the finding of this study revealed that the social skills counselling technique was found to be effective in reducing the symptoms of impulsive behavior. Also, it is recommended that, teachers and counsellors should employ the use of the technique in addressing it instead of using punishment. However, since there is no significant difference in the post test mean scores between male and female pupils who demonstrated symptoms of impulsive behaviour, it is therefore recommended that, teachers and counsellors should not be subjective in applying the technique to address impulsive behaviour.

REFERENCES

- Abikwi, M.I (2008). Knowledge and Managing Children with Attention Deficit/ Hyperactivity Disorder in Benin Metropoli. A PhD thesis University BENIN, Benin City, 2008.
- Afeti, K. & Harrenson, S.N. (2017). Prevalence of attention-deficit/hyperactivity disorder on school performance among primary school pupils in the *Hohoe Municipality, Ghana* <http://doi:10.1186/s12991-017-0135-5>.
- Anokye, R., Acheampong, E., Edusei, A., Owusu, I., & Mprah, W.K (2020) Prevalence of Attention-Deficit/Hyperactivity Disorder Among Primary School Children in Oforikrom, Ghana Based on the Disruptive Behavior Disorders Rating Scale. *East Asian psychiatry* 2020;30:88-90 <https://doi.org/10.12809/eaap1907>.
- American Psychiatric Association. (2013). *Diagnostic and statistical manual of mental disorders, (4th ed)*. Washington, DC: American Psychiatric Association.
- Cohen, L., Manion, L., & Morrison, K. (2007). *Research methods in education*. New York: Routledge.
- Dungurawa, K.B. & Ahmad, S.T. (2019). Effect of social skills training counselling technique on hyperactive behavior among Pupils of Staff Model Primary School of Bayero University, Kano, Nigeria. *Prestige journal of counselling psychology, volume 2, 23-25*.
- Gay, L. R. (2009). *Educational Research: Competencies for Analysis and Applications (9th Ed.)*. New Jersey: Pearson Education.
- Hwang, J.H and Kwank, Y.S (2013).Effect of Social Skills Training on children's social competences, general Behaviour and symptoms.<http://doi.dx.org.10.5765/jkcap.2013.24.4.1>.
- Kilic, K.M &, Abide, F.G.A., (2017). Effect of Social Skills Training on social skills in early childhood, the relationship between Social Skills and Temperament. *Journal of Education and Science, vol 42, (191), 185-204*.
- Kolawole, A. O (2011) Fostering Adolescents' Interpersonal Behaviour: An Empirical Assessment of Enhanced Thinking Skills and Social skills Training. *Edo Journal of Counselling* Vol. 4, Nos. 1& 2.
- Mazur, J. E. (2009). *Learning*. Microsoft Encarta (DVD). Redmond, WA: Microsoft Corporation.
- Researchers Advisor (2006) Table of Determination of Sample Size.
- Susan R (2013). Social skills training, retrieved from <http://www.minddisorders.com/py-Z/Social-skillstraining.html>. (Encyclopedia of mental disorders)

IMPACT OF INTERNET- ASSISTED INSTRUCTIONAL METHOD ON ATTITUDE TO SCIENCE IN ELECTROCHEMISTRY AMONG COLLEGES OF EDUCATION STUDENTS IN NORTH-WEST, NIGERIA

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Abstract

This study investigated the Impact of Internet-Assisted Instructional Method on Attitude to science in Electrochemistry among Colleges of Education Students in North-west Zone, Nigeria. The Population of the study consisted of 972 N.C.E. II Students offering chemistry in North-west Zone, Nigeria. The five Federal Colleges of Education in North-west Zone, Nigeria was given an achievement test and the result was subjected to ANOVA. The result shows no significant difference in their ability level; therefore, simple random sampling techniques was applied to select the two-sampled schools; Experimental and Control groups. Putting gender in to consideration 30-subjects were drawn from the experimental group and 35-subjects from the control group, given a total of 65 respondents for the study. Pretest-Posttest randomized experimental control group design was adapted. The subjects in the experimental group were exposed to the treatment of Internet-Assisted Instructional Method in teaching Electrochemistry while those in the control group were exposed to Lecture Method only in teaching the same concept for a period of six weeks. One Research Instrument was used for the research and validated namely; Attitude to Science Questionnaire (ASQ), with a reliability coefficient of 0.79, Two research questions and the corresponding null hypotheses were formulated and tested at $P \leq 0.05$ level of significance. Findings from the study includes among others; students' attitude to science in electrochemistry were enhanced when taught with Internet-Assisted Instructional Method as compared to those exposed to lecture method only, and the use of Internet-Assisted Instructional Method was found to be gender friendly. Recommendations were made based on the findings of the study which include; teachers in colleges of education should be trained and retrained as well as encouraged to use Internet Assisted-Instructional Method for teaching so as to enhance student's attitude to science in electrochemistry among others.

Keywords: *Internet-Assisted Instructional Method, Attitude to Science, Electrochemistry.*

Introduction

Nigeria is a developing nation and the importance of chemistry for such a nation cannot be overemphasized, this is because, Chemistry is one of the science subjects upon which

technological breakthrough is built and is the pivot on which the wheel of science rotates. Chemistry is very important and helpful in fields such as medicine, agriculture, transportation, housing, industries, etc. Life is made more meaningful with chemical products such as drugs, cosmetics, paints, soap, fertilizers, etc. In addition, various careers exist in Chemistry in the health sector, food processing industries, extractive industries, petroleum and petrochemical industries among others (Johnstone, 2006).

Research evidence from Adeyemo (2010) has proved that Chemistry's contribution to quality of Life and nation building are worthwhile in all aspects. It was based on this that the Federal government through its national policy on education made Chemistry as one of the core science subjects at the secondary school level (FME, 2009). Any nation aspiring to be scientifically and technologically developed must have adequate level of Chemistry education. Based on this fact chemist were in 2008 inspired to declare "what on earth is not Chemistry"? (Eke, 2008). As a result of this recognition given to Chemistry in the development of the individual and the nation that it was made one of the core subjects among the natural sciences and other science-related courses in Nigerian education system. It has been a prerequisite subject for offering most science-oriented courses in the tertiary institution (including Colleges of Education) and this calls for the need in teaching it effectively (Adesoji & Olatunbosun, 2008).

The teaching and learning of Chemistry at the Nigeria Certificate in Education (NCE) level should be as such to produce competent, effective and efficient teachers, who having acquired the requisite skills should be able to impart same to their pupils, as stated in the students Handbook, Federal college of education, Kano, Kano state (Ahmad, 2012). Thus, the objectives of Chemistry programme at the Nigeria Certificate in Education (NCE) level are to produce highly qualified middle-level manpower knowledgeable in the process of Chemistry and capable of inculcating these in the students. Students should have competencies in Chemistry teaching including ability to:

- i. Develop functional knowledge of Chemistry concepts and principles.
- ii. Observe and explore the chemical environment.
- iii. Apply the skills and knowledge gained through the study of Chemistry to solve day-to-day problems.
- iv. Explain simple natural phenomena.
- v. Develop scientific attitudes such as curiosity, objectivity, honesty, etc.
- vi. Manipulate simple apparatus for demonstration use; and
- vii. Improvise simple equipment from available junk in the chemical environment, as stated in the students Hand book, Federal college of education, Kano, Kano state (Ahmad, 2012).

In spite of the prime position Chemistry occupies in our educational system and the effort made by researchers to enhance attitude of students to chemistry and science in general, the students' attitude to Chemistry and science in general is still low (Sage, 2009). The persistence poor attitude to Chemistry subject originates from the secondary school level through the Colleges of Education, where the students are been trained to acquire knowledge in the process of Chemistry and capable of inculcating it to their students (Esezi, 2012). The poor learning outcome of students in Chemistry at Colleges of Education has continued to be a major cause of concern to

all, particularly those in the mainstream of Chemistry education in Nigeria, and this depressing situation has no doubt, informed so many research efforts which have been directed towards identifying the factors responsible for this deplorable condition and what efforts are to be made to improve such situation (Oginni, 2009).

Electrochemistry is the study of chemical reactions which take place at the interface of an electrode, usually a solid metal or a semi-conductor, an anionic conductor, the electrolyte. These reactions involve electric chargers moving between the electrodes and the electrolyte (or ionic species in a solution). Thus, electrochemistry deals with the interaction between electrical energy and chemical charge. (Acar & Tarhan, 2007). Chemistry has been described as a difficult school subject by students of different ages in different countries, because it has a lot of abstract concepts, it was determined that “electrochemistry” was among the most difficult topic to teach and understand for teachers, and students because of its complex structure (Garnett & Treagust, 2007). Some studies such as computer animations (Sanger & Greenbowe, 2007) or computer-assisted learning (Talib, Mathews & Secombe, 2005), Conceptual change instruction (e.g Huddle, White & Rogers, 2010), cooperative learning strategies (Acar&Tarhan 2007), conceptual change text (Yurk, 2007) and Jigsaw Puzzle technique (Doymusetl, 2010), have suggested ways of remedying misconceptions about Electrochemistry in the literature. These Studies have used one Conceptual change Method and or technique, in which all of these techniques generally presented a tremendous improvement in the teaching and learning of electrochemistry but, fails to completely overcome the students’ misconceptions in electrochemistry concept, and so, the poor attitude of students’ to the Subject (Chemistry) still persist (Calik, 2005).

The factors that have been identified by some science education researchers to be responsible for low or poor learning outcomes and poor attitude to Chemistry at Colleges of Education include poor methods of instruction (Eze, 2005), teacher quality (Onu, 2005), lack of availability of human and material resources (Agusiobo, 2002), neglect of practical work (Adeyegbe, 2005), poor attitude to science (Olatoye& Afuwape, 2004), among others. Chemistry students in Colleges of Education develop negative attitude towards Chemistry. This is due to the fact that Chemistry as a subject of study incorporates many abstract/difficult concepts, which are central to further learning in both Chemistry and other sciences. The fact that, students have not attained formal reasoning and therefore it is difficult for them to understand abstract concepts. This difficult/abstract nature of Chemistry along with other content learning difficulties such as mathematical nature of Chemistry makes it to be regarded as a difficult subject, an observation that sometimes repels learners from continuing with studies in Chemistry (Taber, 2002).

Gender difference is also among the factors responsible for student’s poor attitude in chemistry and science in general, as many studies looking at gender differences have focused on differences in attitude and performance related to the different in science subjects. A number of studies have found that boy’s attitude to science is significantly better than that of girls (Malone, 2003). Fraser (2004) in a study of Australian secondary school students also Concluded that boys' attitude in biology, physics and chemistry was significantly better than girls Achievement in test results. Research evidence has shown an ever-increasing gap between the attitude and performances of boys and girls in chemistry at senior secondary school level. In fact, girls now

tend to ignore the Subject all together (Lie & Sjoberg, 2014). This has resulted in to a situation where there are more boys than girls doing chemistry at this level. As a result, chemistry classes and science classes in general are dominated by boys while the girls go into reading languages and Arts. The perceived low achievement and poor attitude of girls in chemistry is an unpleasant development as it spells doom for those of them who would like to pursue careers in the sciences. This is because a pass at credit level in chemistry is required at Senior School Certificate Examination (SSCE) for admission into science programmes in the universities, colleges of education and other tertiary institutions (Onekutu, 2002). Numerous studies have shown that the source of difficulty for many Chemistry learners include thermodynamics (Ozmen & Ayas, 2003), electrochemistry (Garnett & Treagust, 2007), balancing redox equations and stereochemistry (Zoller, 2000), chemical bonding (Taber, 2002), intermolecular forces (Baker & Miller, 2006), among others.

The Internet is a technology which provides interaction between students – teachers and the lesson content and creates electronic environments in which texts, data and graphics can be shared by individuals and groups in the same or different locations, connected via computers (Scholastic, 2003). It has some advantages for students such as providing a learning environment that is independent of time and place, responding to needs of faster and slower learners and providing the opportunity to fast access to information. With the continuing development of computer networks and their entry into the classroom, a new stage of computer assisted education (Internet Assisted Instructional Method) has taken its place in the educational system (Ergun, 2008).

According to United Nations Educational Scientific and Cultural Organization (UNESCO 2013,) to Measuring Information and Communication Technologies (ICT) in education, Internet-Assisted Instructional Method (I.A.I.M) refers to an interactive learning strategy using the internet to deliver instructional materials on a computer or through other devices, in accordance with learners' pedagogical needs. This mode of instruction helps to develop autonomy in research activities and information literacy skills. Internet-Assisted Instructional Method (I.A.I) differs from computer- Assisted Instruction (CAI) method, because computer- Assisted Instruction (CAI) has package (that is) it has limit to what the learners can learn, but Internet-Assisted Instructional Method (I.A.I.M) has no limit to what the learners can learn (Erkunt & Akpmar, 2002).

A successful learning in a classroom environment depends on the characteristics of the students such as their cognitive and preferences, learning styles, information processing ability, self-efficacies, learning preferences together with many other factors. The success obtained in the internet environment or Internet Assisted Education is also affected by these factors. When teachers become aware of how to find information online, they can help their students begin to tap into these huge resources. This skill is useful to students not only for accomplishing their homework but also as a survival skill in the modern work place. The internet is a vital part of the education process. Resources for learning and education are implemented into lesson plans and homework every day. Students and teachers can access unlimited amounts of information to broaden their education. With internet access in schools, there is almost no limit to what students can learn (Wu & Tsai, 2006).

In an attempt to address the problems highlighted for poor attitude to Chemistry, the researcher in this study therefore, intends to continue from the efforts being made by the previous researchers to rectify the ugly situation, that is, the poor attitude of students to Chemistry and to give a practically oriented teaching strategy known as “Internet-Assisted Instructional Method.”(I.A.I.M), so as to find out its impact on students attitude to science in general and Electrochemistry concept in particular among Colleges of Education Chemistry students’ in North-West Zone, Nigeria.

Statement of the Problem

The role of Chemistry in the development of scientific base of a country cannot be overemphasized and Nigeria is not an exception. Yet with the increasing importance of Chemistry to the unfolding world, the attitude of Nigerian Colleges of Education students remains depraved towards chemistry and science in general (Saage, 2009).

Research evidence revealed a number of factors responsible for the students’ poor attitude to chemistry at Colleges of Education, which include poor methods of instruction, poor attitude to science in general from the part of students, teachers’ quality, neglect of practical work, lack of availability of human and material resources, gender differences, mathematics and abstract nature of Chemistry concepts among others. A number of difficult chemistry concepts (oxidation and reduction. Chemical equilibrium, electrochemistry, mole concept, among others) have been identified as some of the major causes of student’s poor attitude to chemistry, Electrochemistry is one of such difficult concepts (Caret, 2010).

Therefore, the researcher in this study try to look at the problem of student’s poor attitude to chemistry and science in general in one of the difficult chemistry concepts; that is Electrochemistry through the use of practically oriented teaching strategy known as Internet-Assisted Instructional Method (I.A.I.M) so as to see if it can improve the students ‘attitude to chemistry at Colleges of Education in North-west zone, Nigeria. The Researcher also wants to find out if the use of Internet for teaching in classrooms can present Gender differences or otherwise, among college of education chemistry students in North-west zone, Nigeria.

Objectives of the Study

The objectives of the study are to:

1. Investigate whether Internet-Assisted Instructional Method has impact on attitude to science among Colleges of Education Chemistry students in North West Zone, Nigeria.
2. Find out if Internet- Assisted Instructional Method has impact on attitude to science of Male and Female among colleges of education students in North-west Zone, Nigeria.

Research Questions

The study answered the following questions:

1. What is the difference in attitude to science between students taught Electrochemistry using Internet-Assisted Instructional Method and those taught using lecture method?
2. What is the difference in attitude to science of Male and Female students taught Electrochemistry using Internet-Assisted Instructional Method?

Research Hypotheses

The following null hypotheses were formulated and tested at $P \leq 0.05$:

- HO₁:** There is no significant difference between the mean attitudinal scores of students taught Electrochemistry using Internet-Assisted Instructional Method and those taught using lecture method.
- HO₂:** There is no significant difference between the mean scores of Male and Female students in attitude to science when taught with Internet-Assisted Instructional Method.

Methodology

The researcher uses randomized-experimental control group design, using pretest and posttest for the study, as recommended by Shitu (2013). The study involves two (2) groups; control and experimental group consisting of both male and female study subjects. A pretest was administered first to both the experimental and control group before the treatment, to determine if the two groups are not significantly different in their ability level and attitude to science.

The experimental group was taught the concept of electrochemistry using the Internet-Assisted Instructional Method while the control group was taught the same concept using the lecture method for a period of six weeks. After the treatment, both the experimental and control groups were subjected to posttest using Attitude to Science Questionnaire (ASQ). The posttest treatment was done in order to determine the effectiveness of Internet-Assisted Instructional Method on attitude to science among Colleges of Education Students.

The population for this study comprises all NCE II chemistry students in the five (5) Federal Colleges of Education in North-West Zone, Nigeria. The Federal Colleges of Education are; Federal College of Education, Kano, Federal College of Education, Zaria, Federal College of Education (Technical), Bichi, Federal College of Education, Katsina and Federal College of Education (Technical), Gusau. The total population of NCE II Chemistry students as of 2015 is 972 students, consisting of 471 male and 501 female students (National Commission for Colleges of Education, NCCE, News Letter, 2015). The Colleges are accredited by the National Commission for Colleges of Education (NCCE). The colleges are similar in terms of manpower, student's population, quality of staff among others. NCE II students are considered to be suitable for the study, because the topic to be treated in the study, electrochemistry, fall in the school syllabus of NCE II. The distribution of the population is given in Table 1.

Table 1: Population of the study

S/N	Institution	Location	Male	Female	Total
1.	Institution A	Zaria	106	110	216
2.	Institution B	Kano	110	95	205
3.	Institution C	Gusau	000	126	126
4.	Institution D	Bichi	122	80	202
5.	Institution E	Katsina	133	90	223
Total			471	501	972

Source: NCCE News Letter (2015).

The sample size for this study was 65 participants which comprises of 30 subjects from the experimental group (F.C.E. Kano) and 35 subjects from the control group (F.C.E. Zaria). In selecting the sampled schools, the researcher subjected the whole 5- colleges of education in the North-West Zone Nigeria for achievement test; the result of the test was then subjected to ANOVA in order to find out if significant difference exists in the ability level of the schools. The result from the ANOVA shows that differences exist in the Mean scores of the schools, but the differences are not significant. Therefore, the researcher went further to apply simple random sampling technique to select the two (2) sampled schools, in which Institution A was assigned as Control group and Institution B as Experimental group. From the population of the two (2) colleges selected, a total of 65 participants (33males and 32 females) were selected as sample size, this is in line with central limit theory that recommends a minimum of 30 sample size (Tuckman, 1975 & Sambo, 2008). This has been achieved by writing the names of the students on pieces of papers with letters A or B to each name, with letter A indicating the experimental group and B indicating the control group. A student was asked to pick up to 65 samples this way putting gender in to consideration. This gives a total of 65 Research Participants, where by 15 Males and 15 Females participants came from the experimental group (F.C.E. Kano), making a total of 30 participants in the group. So also, in the Control group (F.C.E. Zaria), there are 18 Males and 17 Females, making a total of 35 Research participants in the group. This gives a total of 65 Research participants as sample size for the study. the Sample size for the study is presented in Table 2 ;

Table 2: Sample size for the Study

S/N	School Name	Male	Female	Total	Group
1	Institution A	18	17	35	Control
2	Institution B	15	15	30	Experimental
	Total	33	32	65	

The data collected for the purpose of this study were analyzed as follows:

Answering Research Questions

Question One: What is the difference in attitude to science of students taught Electrochemistry using Internet-Assisted Instructional Method and those taught using lecture method?

This research question was answered using mean rank, Sum of Mean rank and Mean Rank difference.

Table 3: Summary of Mean Rank Differences in attitude to science between Experimental and Control Groups

Groups	N		Mean Rank		Mean Rank Gain
	Pre	Post	Pre	Post	
Experimental	30,	30	57.75,	84.77	27.02
Control	35,	35	57.40,	58.73	1.33

Result of Table 3 showed that differences exist between the attitude to science of subjects exposed to treatment of Internet- Assisted Instructional Method (Experimental group) and those taught using lecture method (control group). Their mean Rank attitudinal scores are 57.75, 84.77, 57.40 and 58.73 in their Pretest experimental, posttest experimental, pretest control and posttest control respectively. While the mean rank gain between pretest experimental and posttest experimental was 27.02, and the mean rank gain between pretest control and posttest control was only 1.33, this shows that a remarkable mean attitudinal gain has therefore taken place between pretest experimental and posttest experimental groups. Indicating that, subjects in the experimental group have gain positive attitudinal change after the treatment.

Question Two: What is the difference in attitude to science of Male and Female students taught Electrochemistry using Internet-Assisted Instructional Method?

This research question was answered using mean rank, Sum of Mean rank and Mean Rank difference.

Table 4: Summary of Mean Rank difference in attitude to science between male and female Students that were exposed to Internet-Assisted Instructional Method

Gender	N	Sum of Ranks	Mean Ranks	Mean Rank Difference
Male	15	255.00 →	16.67	0.66
Female	15	260.00 →	17.33	

Table 4 shows that, there is no difference in the mean science attitude ranking in electrochemistry between Male and female students exposed to Internet- Assisted Instructional Method among Colleges of Education students in North West Zone, Nigeria. Their calculated mean science attitude rank scores are 16.67 and 17.33 by Male and female students in experimental group respectively, with a Mean Rank Difference of 0.66. Furthermore, their computed Sum of Rank scores are 255.00 and 260.00 by male and female experimental students respectively implying that no difference in attitude to science on account of student's gender when both are exposed to Internet Assisted Instructions.

Testing of Research Hypotheses

The following null hypotheses were tested at $P \leq 0.05$ as follows;

Hypothesis One: There is no significant difference between the mean attitudinal scores of students taught Electrochemistry using Internet-Assisted Instructional Method and those taught using lecture method.

Kruskalwallis Statistics at $P \leq 0.05$ was used for the analysis. The result is presented in table 5

Table 5: Summary of Kruskal wallis Statistics, Mean Rank Difference in Attitude to Science in Electrochemistry between Experimental and Control Groups

Groups	N		Mean Ranks		H-test (Chi-square)	DF	P	Remark
	Pre	Post	Pre	Post				
Experimental	30,	30	57.75,	84.77	12.32	3	0.006	S
Control	35,	35	57.40,	58.73				

Significant at $P \leq 0.05$

Table 5 Result of Kruskal wallis statistical analysis showed that significant differences exist between attitude to science of subjects exposed to treatment of Internet-Assisted Instructional Method (Experimental group) and those taught with lecture method (control group). This is due to the fact that the calculate p value of 0.006 was found to be lower than the 0.05 alpha level of significance. Their mean Rank attitudinal scores are 57.75, 84.77, 57.40 and 58.73 in their Pretest experimental, post test experimental, pretest control and posttest control respectively. This implies that there has been remarkable mean attitudinal change.

Therefore, the null hypothesis which state that there is no significant mean attitudinal change between subjects of the experimental and control group is hereby rejected.

Hypothesis Two: There is no significant difference between the mean scores of Male and Female students in attitude to science when taught with Internet-Assisted Instructional Method.

Mann Whitney Statistics was used for the analysis and the result is presented in table 6

Table 6: Summary of Mann Whitney Analysis, Difference in the Mean Rank of attitude to science between Male and Female Students Exposed to Internet-Assisted Instructional Method

Gender	N	Mean Rank	Sum of Ranks	Z	Mann-Whitney U	P.	Remark
Male	15	16.67	255.00	1.63	351.00	0.10	NS
Female	15	17.33	260.00				

Results In Table 6; Mann Whitney statistical analysis showed that there is no significant difference exist in the mean rank of attitude to science between Male and female students exposed to Internet-Assisted Instructional Method among Colleges of Education students in

North West Zone, Nigeria. Reason being the fact that the calculated p value of 0.10 is higher than the 0.05 level of significance Their calculated science attitude mean rank scores are 16.67 and 17.33 by Male and female students in experimental group respectively. Furthermore, their computed Sum of Rank scores are 255.00 and 260.00 by male and female experimental students respectively implying that no significant difference in attitude to science on account of student's gender when both are exposed to Internet-Assisted Instructional Method. Therefore, the null hypothesis which states that there is no significant difference in the mean rank of attitude to science between male and female students exposed to Internet-Assisted Instructional Method among Colleges of Education students in North West Zone, Nigeria, therefore hypothesis two is hereby accepted and retained.

Summary of Findings

The Major Findings of the study are summarized as follows;

1. Significant differences exist between attitude to science of subjects exposed to treatment of Internet-Assisted Instructional Method (Experimental group) and those taught with lecture method (control group).
2. No significant difference exists in the mean rank of attitude to science between male and female students exposed to Internet-Assisted Instructional Method. Therefore, it is gender friendly.

Conclusions

This study investigated the "Impact of Internet-Assisted Instructional Method on attitude to science in Electrochemistry among Colleges of Education Students in North-west Zone, Nigeria" The following conclusions were made from the study;

- 1- It is revealed that chemistry students' science attitudes are positively enhanced when exposed to the treatment of Internet-Assisted Instructional Method.
- 2- The study revealed that no significant difference exists between male and female students' science attitude when exposed to the treatment of Internet-Assisted Instructional Method as the treatment is gender friendly. Therefore, the study concluded that, Internet facility can be used as an effective tool for teaching and learning in classrooms apart from the lecture method.

Contributions to Knowledge

1. This study established that; the Internet facility can be used as an effective tool for teaching in classrooms apart from the lecture method, that is to say it is a good activity-based method of teaching, with a mean rank gain between pretest experimental and posttest experimental was 27.02 and the mean rank gain between pretest control and posttest control was only 1.33, this shows that a remarkable mean attitudinal gain has therefore taken place between pretest experimental and posttest experimental groups. Indicating that, subjects in the experimental group have gain positive attitudinal change after the treatment.
2. The study also evidence that the method used under the study; Internet- Assisted Instructional Method (I.A.I.M) is gender friendly, as its boost's both male and female student's attitude to chemistry and science in general as their calculated mean science attitude rank scores are 16.67 and 17.33 by Male and female students in experimental

group respectively, with a Mean Rank Difference of 0.66. Furthermore, their computed Sum of Rank scores are 255.00 and 260.00 by male and female experimental students respectively implying that no difference in attitude to science on account of student's gender when both are exposed to the treatment of Internet Assisted Instructional method.

Recommendations

The following recommendations are hereby suggested

1. Chemistry teachers of colleges of education should be encouraged by the National Commission for Colleges of Education (NCCE), to use the Internet- Assisted Instructional Method in the teaching and learning process as evident from the student's improvement in attitude to chemistry and science in general when exposed to the method at colleges of education, in north-west zone, Nigeria.
2. The management of colleges of education should provide functional internet facilities in all the campuses of the colleges of education in North West zone of Nigeria, which will be used by both teachers and students, in order to acquire the skills, they have learned from Internet-Assisted Instructional Method and put it into teaching and learning process. This will enhance student's attitude to science/ both males and females

REFERENCES

- Acar, B.K. and Tarhan, L. (2007). Effect of Cooperative Learning Strategies on Students' Understanding of Concepts in Electrochemistry. *International Journal of Science and Mathematics Education*, 5(2), 349-373.
- Adesoji, F.A. and Olatunbosun, S. (2008). Student, Teacher and School Environmental Factors as Determinants of Achievement in Colleges of Education Chemistry in Oyo State, Nigeria. *Journal of International Social Research*, 1(2). 65-69.
- Adeyegbe, S.A. (2005). In Search of Indices for Measuring the Standard of Education: A Need for a Shift in Paradigm. A Paper Presented at a Special Seminar for West African Examination Council, Lagos.
- Adeyemo, A.N. (2010). Cooperative Instructional Strategy as an Effective Method for Chemistry Teaching in Colleges. *Journal of Chemical Education*, 56(6), 377-379.
- Agusiobo, N.N. (2002). Improving the Quality of Science Education in Nigerian Colleges of Education. *Kasugu Journal of Education*, 1(1), 42-48.
- Ahmad, A. K. (2012). Annual Students Handbook, Federal College Of Education Kano, Kano State.
- Baker, V; and Miller, R. (2006). Students' Reasoning about Basic Chemical Thermodynamics and Chemical Bonding; what Changes Occur During a Context-Based Post – 16 Chemistry Course? *International Journal of Science Education*, 32(3):512-535.
- Bayram, H. (2009). Relationship between Science Attitudes, Logical Thinking Ability, Information Literacy and Academic Achievement through Internet Assisted Chemistry Education. Faculty of Education, Marmara University, Istanbul, Turkey. *Journal of Chemical Education*, 5(4):9-16.
- Becker, J. (2008). Internet Use by Teachers. Retrieved June 26, 2010 from <http://www.crito.uci.edu/tlc/findings/internet-use/startpage.html>
- Calik, M. (2005). A Comparison of Level of Understanding of Grade 8 Students and Science Students' Teacher Related to Selected Chemistry Concepts. *Journal of Research in Science Teaching*, 42(6):638-667.
- Caret, L. (2010). How Can Technology Influence Student Academic Performance? Retrieved July 12, 2011 from <http://caret.iste.org/index.cfm?fuseaction=answerandquestion ID=1>.
- Doymusetl, R. (2010). 'Constructing Scientific Knowledge in the Classroom', *Educational Researcher*, 23(7), 5-12.
- Eke, G.E. (2008). Chemistry and Technological Advancement in Nigeria. A paper Presented at 2nd Chemsearch Conference, Lagos, Nigeria.

- Eze, S.N. (2005). The Application of Simulation Method in the Teaching and Learning of Chemistry. *Journal of Chemical Education*, 56(5), 229-235.
- Ergun, M. (2008). *Why Use the Internet in Education?* Retrieved December 20, 2010, from <http://www.egitim.aku.edu.tr/erguns.htm>.
- Erkunt, H.V. and Akpmar, Y. (2002). *Importance of Internet in Schools*. Retrieved from <http://www.crito.uci.edu/tlc/findings/internet-use/strategy.htm>.
- Ezezi, O.I. (2012). Assessment of Internet Assisted Learning Resources (IALR) in Teaching Chemistry in Senior Secondary Schools in Rivers State, Nigeria. *Journal of Research in Science Teaching*, 8(9):33-40).
- Federal ministry of education (2009). *National Policy on Education*. 4th Edition. Lagos: NERDC Press.
- Fraser B.J. (2004). Gender differences in science achievement: Do school effects make difference? *Journal of Research in Science Teaching*, 31 (8), 857-871.
- Garnett, P.J. and Treagust, D.F. (2007). Conceptual difficulties Experienced by College Students of Electrochemistry. Standard Electrode Potential, Electrical Cells, Electrochemical Series and Electrolysis. *Journal of Research in Science Teaching*, 12(9), 78-86.
- Hanauer, D. (2004). Internet use among Community College Students' Implications in Designing Healthcare Interventions. *Journal of American College Health*, 52(15):197-202.
- Huddle, P.A; White, M.D. and Rogers, F. (2010). Using a Teaching Model to Correct Known Misconceptions in Electrochemistry. *Journal of Chemical Education*, 77(1):104-110.
- Internet Assisted Instruction (IAI) – UIS Glossary, United Nations Educational Scientific and Cultural Organization (UNESCO Institute for Statistics). Home Term UNESCO. Retrieved from Glossary. <http://www.Uisunesco.org/glossary/en/term/2370/en>
- Johnstone, (2006). *Chemistry in perspective*. 4th Edition. Bungay Press limited.
- Lie, A. and Sjoberg, S. (2014). Gender differences in middle grade science achievement: Subject domain and course emphasis. *J. Sci. Edu.* (60), 613-650.
- Maccoby, E.E. and Jackline, C.N. (2012). *The psychology of sex differences*, U.S.A: Stanford University Press.
- Malone, M.R.(2003). The relationship of science as viewed by meta-analysis research. *Journal of Research in Science Teaching*, 20(5), 481-495.
- News Letter (2015). National Commission for Colleges of Education.

- Oginni, A.M. (2009). An Assessment of Factors Related to the Poor Performance of Students in the Learning of Science. *OSR Journal of Applied Chemistry*. e-ISSN: 2278-5736, Volume 4, Issues 5.
- Ojo, S.N. (2005). The Application of Simulation Method in the Teaching and Learning of Chemistry. *Journal of Chemical Education*, 56(5), 229-235.
- Olatoye, K. J. and Afuwape, R. A. (2004). Relationship between Scientific attitude, Attitude to science and science achievement in sec. schools. In Katsina state Nigeria. *Journal of the Faculty of Sciences Science*. 10 (1), 43-48.
- Onekutu A. (2002). Gender differences in achievements in junior secondary school examination in integrated science: Implication for national development. In O.O. Okpeh (Ed) *Review of Gender Studies in Nigeria*.
- Onibukun, O.M. (2012). Sex differences in quantitative and attitude scores. *Abacus. J. Math. Assoc. Nig.* 14, 152-56.
- Onu, A.D. (2005). Students under Achievement in Chemistry: A Closer Look at the Teachers Competence. *Nigerian Journal of Science and Educational Research (NIJORSER)*, 1(2), 15-18.
- Ozmen, H. and Ayas, A. (2003). Students Difficulties in Understanding of the Conservation of Matter in Open and Closed System Chemical Reactions. *Chemistry Education: Research and Practice*, 4:279-290.
- Sage, O. (2009). Causes of Mass Failure in Chemistry Examinations among Colleges Students. *Journal of Research in Science Education*, 32(3), 602-612.
- Sanger, M.J. and Greenbowe, T.J. (2007). Addressing Students' Misconceptions Concerning Electron Flow in Aqueous Solution with Instruction Including Computer Animations and Conceptual Change Strategies. *International Journal of Science Education*, 22(5):521-537.
- Scholastic, N. (2003). *Welcoming the Internet into Your Classroom*. Scholastic Incorporated. Retrieved December 3, 2003 from <http://www.teacher.scholastic.com/professional/teachtech/welcomeinternet.htm>
- Shitu, M. (2013). Effect of Guided Discovery Strategy on Learning Outcome on Low Achieving Senior Secondary School Physics Students in Kaduna Metropolis, Kaduna State, Nigeria. Unpublished M.Ed Thesis, A.B.U. Zaria.
- Taber, K.S. (2002). Students Misunderstanding of the Concept of Chemical Bonding. *School Science Review*, 78(285), 85-95.

- Talib,O; Mathews, R. and Secombe, M. (2005). Computer-Animated Instruction and Students' Conceptual Change in Electrochemistry Preliminary Qualitative Analysis. *International Education Journal*, 5(5):29-42.
- Tuckman, B.W. (1975). *Measuring Educational Outcomes*. New York; Harcourt Brace Hovawick.
- UNESCO, (2013).– United Nations Educational Scientific and Cultural Organization/.Internet Assisted Instruction Model//Home Term UNESCO. Retrieved from Glossary. <http://www.uis.unesco.org/glossary/en/term/2370/en>.
- Wu, Y.T. and Tsai, C.C. (2006). University Students' Internet Activities and Internet Self-Efficacy. A Study of Three Universities in Taiwan. *Cyber Psychology and Behaviour*, 9,441-450.
- Yurk, N. (2007). The effect of Supplementing Instruction with Conceptual Change Texts on Students' Conceptions of Electrochemical Cells. *Journal of Science Technology*, 16:515-523. Retrieved from <http://www.scribd.com/doc/19764695/simulation-electrochemistry.htm> on 01/09/10.
- Zoller, U. (2000). Students' Misunderstandings and Alternative Concepts in College Freshman Chemistry (General and Organic). *Journal of Research in Science Teaching*, 27(10), 1053-1065.

HEALTH EDUCATION AND PROMOTION A MEANS FOR ADDRESSING HEALTH CHALLENGES IN NIGERIA

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Abstract

There is an urgent need to continuously promote and deliver health education in the midst of several challenges faced in Nigeria. Good quality health is an index for national development, as it is believed that a Nation's health is directly proportional to a Nation's wealth as health is wealth. Therefore delivering qualitative health education is same as empowering citizens on wealth creation and healthy living which is pertinent and key to sustainable development. The paper focuses on current challenges in the Nigerian economy and emphasizes on novel ways in which health education could be used as a solving tool to these challenges. The paper sees health education and promotion as a critical to the development of lasting solution to the Nation's health challenges and the achievement of sustainable developmental goals. It further explains that national challenges such as insecurity, COVID-19 pandemic, environmental pollution and hazards, drug abuse, endemic diseases and outbreaks such as malaria, cholera, other food and water borne diseases and life threatening diseases such as HIV/AIDS, cancer among others, can be prevented and control through health education and promotion. The paper suggest that health education need to revolve around the ever-changing technology and made free to citizens not only in schools but also other informal settings.

Keywords: Health, Education, Health challenges, Strategies, Sustainable development

Introduction

Good quality health is a fundamental human right and an index for national development, as it is believed that a Nation's health is directly proportional to a Nation's wealth as health is wealth. As a matter of fact delivering qualitative health education is same as empowering citizens on wealth creation and healthy living which pertinent to sustainable development (Ihenko & Joseph, 2020).

The word 'Health' reflects a lot of denotations. Sylvester, (2001) defines health as human effectiveness and the qualifying factor for living. The World Health Organization (WHO) (1948) sees health as a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity. Health is therefore an extent to which an individual or group is able to realize aspirations and satisfy needs in order to cope with the changing environment. A healthy society influences the productive potential and prosperity of its citizens (Bernard, 2012). Education is therefore a potent agent of change in any society and the vehicle for the transmission of knowledge, skills and values from one generation to another.

Every man desires for good health and the major goal of health education is to provide scientific knowledge that an individual can use to improve his health status as well as prevent the

occurrence of diseases. Health education has demonstrated pertinent roles in ensuring total wellbeing of an individual through knowledge acquisition, practical skills and positive behavioral change towards healthful living (Ajala, 2002). According to Johnson (2010), Health education is defined as any combination of learning experiences prepared to enable individuals and communities to improve their health and make quality health decisions through enhancement in knowledge, skills and attitudes.

Health education seeks to foster sound health and empower people to improve their health seeking behaviours and practices, change their life-styles and use health services effectively. It contributes to the total education of the individual by providing meaningful experiences which can positively influence health behaviour. Health education is perceived as a frontline defense in the efforts of preventive medicine to diseases thereby bringing about effective positive changes to an individual and the society. It is significant to note that if good health is lacking, productivity can be seriously undermined and the dividends of health reflects the development of any nation (Basch, 2011).

Although, health education and promotion sometimes seems similar but are two different concepts. Health education is about providing health information and knowledge to individuals and communities and providing skills to enable individuals to adopt healthy behaviours while health promotion focuses on creating awareness on health issues, identifying prevention and attitudes to ill health and motivating community to increase usage of available health facilities in the pursuit for good health. Health promotion corroborate that policy makers are conscious of the health consequences of their decisions and accept responsibilities for health. More importantly, health promotion ensures that the goals of health education is continuously enhanced, strategized, achieved and implemented (Edlyne, 2020).

It is therefore noteworthy that the adequacy in the knowledge of health behaviour and practices equips an individual with good health that could be instrumental to the achievement of the basic goals of education and make him fit to bring about positive change to his life, family and the society at large (Bernard, 2012).

In Nigeria today, health instruction have been emphasized at all levels of education and made possible through teaching and sensitizing people in schools on methods of prevention and control of diseases as well as the essence of healthy living, this was because schools were considered excellent places among all organized institutions due to the large mass, diverse age groups and also school serves as the widest and deepest channel for placing information at the disposal of the citizens (Rimande-Joel & Obiechina, 2021). However, this only goes to a fraction of the populace who are opportune to attend school. More so, the nation is currently facing challenges which threatens the operation of schools such as the insecurity and the COVID-19 pandemic, as all these pose a question of how health education and promotion could be given to the populace in spite these challenges. And the fact that people need to be constantly and consciously aware of the health implications these challenges are bringing upon them.

Health Education as a means for addressing Health Challenges

Health awareness and promotion could serve as a great means for addressing the following national health challenges:

Environmental hazards/pollution

Man and man-made activities have adversely affect the natural environment which comprises of the soil, air and water. These adverse effect include, pollution of water sources through discharge untreated wastewater, open defecation, indiscriminate waste and refuse disposal, emission of harmful and toxic gases into the atmosphere, deforestation, poaching of wildlife, illegal mining, gas flaring and damage to aquatic life. These in turn results to loss of diversity, green-house effect and global warming. However, many people involved in such practices are ignorant of the danger these activities pose to them and the environment in the long run, as they are the fraction who do not attend school. So with the adequate health education both in school and the non-formal school systems, citizens will learn to value their environment thereby preventing hazards and environmental pollution, which poses significant health risk (Fatubarin, 2014).

Endemic diseases, Epidemic and pandemics

Diseases such as Covid-19, malaria, cholera and typhoid fever still poses significant threat to public health and accounts for several morbidities and mortalities worldwide despite available therapies (WHO, 2021). There is no doubt that these diseases requires adequate preventive measures, as prevention is better than cure. Why do we have to spent huge amount of finances on drug research when we could always tackle the origin and cause of these diseases? This could be achieved through continuous health education and health promotion for citizens especially on the causes, mode of transmission and ways of prevention of these diseases. So the more people are aware about their health, the better they are able to take appropriate measures in improving their general hygienic conditions and environmental sanitation (WHO, 2021). The morbidities and mortalities of sexually transmitted diseases such as HIV/AIDS which has no cure and immunization could be reduced through health education in schools and also informal environs.

Malnutrition

Malnutrition is the underlying cause of morbidity and mortality of a significant proportion of children under five (5) years in Nigeria, accounting for more than 50% deaths (Rimande-Joel and Obiechina, 2021). Good nutrition enables citizens to be healthy, improve mental health and physical energy needed for manpower, so with adequate health education people will begin to understand the health benefits of balance diet, physical exercise and other positive lifestyle.

Drug Abuse

Drug abuse are emerging global concerns which pose significant threat to the social and health fabrics of families in Nigeria. The increase in drug abuse has led to a corresponding increase in violence, crimes and diseases such as hepatitis and HIV/AIDS (Oshodi *et al.*, 2010). This drugs interfere with human behaviour, nervous system and our sense of reasoning. Tobacco, Indian hemp or cocaine can cause cardio-vascular disease, respiratory tract infection, psychosis and result in impaired learning as they alter the physical, mental and social health of an individual. Therefore, there is need for health education and awareness to be geared towards factual information and sensitization on the health implications of drug abuse, drug problems and

trafficking and also the involvement of drug agencies, community groups, youth leaders, religious and traditional leaders and voluntary organizations to enlightened people and join the fight against drug abuse.

Food and water security

Food quality and safety are important and essential consumer requirements. Food handling personnel play an important role in ensuring food safety throughout production, storage, and consumption. The World Health Organization outlined the golden rules to ensure the safety of food when being processed. Despite these set standards, the number of reported outbreaks of food-borne illnesses has been high, both in developed as well as developing countries (WHO, 2002). However, in developing countries like Nigeria, the problem is exacerbated due to ignorance, poor hygienic practices, poverty, the lack of adequate health care facilities and orientation regarding food-borne diseases. Therefore, proper enlightenment of food vendors and market sellers.

Water borne illnesses continues to possess global threat to public health. The increase in population and industrialization is a consequence of a corresponding rapid increase in environmental pollution and the demand for safe and potable water (Agbabiaka, Shitu, Agbabiaka and Otuyele, 2021) hence, water remains the most abused resource in the environment and type of waste affects the treatment or renewability of water. In Nigeria an estimated 63 million people lack access to an improved source of drinking water, and about 100 million people do not have access to basic facilities for sanitation and hygiene, more so, 12% of the population practice open defecation which pollutes water sources (WHO, 2015). Therefore there is need for health awareness on hygienic practices, poor sanitation and safety measures of drinking water treatment such as boiling and chlorination which is essential in combating water-borne diseases. Charles, Suriani, Poh, Norliza and Ibrahim, (2021) also reported that proper health education intervention improved water sanitation and hygiene (WASH) practices.

Cancer and carcinogens

Cancer is a life threatening disease characterized by uncontrolled growth of abnormal or malignant cells in the body. Carcinogen are chemical or physical agents that cause cancer in individuals exposed to them. They work by interacting with the human cell and inducing genetic mutations. Many genetically modified food and fruits contains carcinogenic substances which could cause abnormalities in humans, as a matter of fact frozen meats, chickens, turkeys and cabbages imported into the country are embalmed with cancerous agents known as formaldehyde, and individuals exposed to this agent are at high risk of leukemia and brain cancer (NCI, 2013).

In Nigeria today fruit vendors' uses calcium carbide and ethylene to ripen fruits such as banana, mangoes, pawpaw, oranges among others and this in turn could results in the development of cancerous cells in consumers. Carbide reduces oxygen in brain and could lead to seizures, dizziness or coma (Adekalu, Fashanu, Olaitan, Ogunsua, Oyebanji, Ibrahim, Akande and Oyebanji 2020). Farmers also need to be re-oriented on the use of wastewater in irrigation of crops especially vegetables which could directly absorb some heavy metals and chemical from such water and ingested by humans. More so, quantities of pesticide and other agrochemicals

used in the farms are not in agreement with the recommended quantities and this results to having residues higher than recommended limits which pose a serious health implication to man (Iro *et al.*, 2019).

Health education and promotion therefore need to be channeled towards creating awareness on the dangers of these foods and to enlighten citizens to consume only fresh foods and food products other than chemically preserved or genetically induced ones which could be cancerous to their health, this will help to prevent cancers in the society.

Insecurity

Insecurity is state of being subjected to fear, threat, danger, molestation, intimidation or harassment (Amina, 2021) and this leaves many people traumatized, some suffer anxiety, depression, heart attack or cardiac arrest among others. As a matter of fact, a lot of people die helplessly in situations when there is bomb explosion, killings, bleeding resulting from gunshots, injury/wounds or cuts. As a result of these people need to be enlightened on how to save lives when the need arise. There is an urgent need to educate and train citizens on healthy lifestyles and more importantly the first aid techniques and safety preventive measures needed to be taken in scenarios when such conditions arises, and this could be achieved through health education and promotion in all settings of the society.

Health Education and promotion strategies for addressing health challenges

Leveraging on community health workers

Community education is an essential tool in enhancing citizen involvement, the sharing of decision-making and total community participation in the education enterprise. Awareness is better created through community health education among women, youths, trade unions, market places, local or grass root institutions. Thus, non-formal community education deserves very special attention in view of its huge potentials in making community members responsive to health transformation. These health workers would move from house-to-house to provide first aid care and health education to community members, so that citizens get the right health information and make informed health decisions (Ogbonna, Ezenekwe and Isidienu, 2016).

Vicarious Teaching

Vicarious teaching strategies involve the use of media, devices or appliances such as television, radio, film, slides, transparencies and tape records. Here learners view or listen to presentation on health instructions through these appliances be it a programmed radio or television broadcast in regards to any current health related issue. Vicarious teaching actively involve learners and can be effectively used to promote learning amidst this COVID 19 pandemic era. It could also help physically challenged individuals to learn for example tape recorder for the blind, visual films for the deaf. It covers a wide range of audience and also keeps away the barrier of time of the day, weather condition or availability of space. Here, citizens will learn without the fear of contacting infectious diseases coming from overcrowding (Okueso and Akinwusi, 2011).

Leverage on communication technology

There is a need for health instructions to stay up to date with the ever-changing technology. Information on emerging health issues could be continuously promoted and supplied through

news coverage either on radio or television, soap operas, musical video, mobile phones, internet, signboards in strategic places, adverts, multimedia projectors/interface on streets and social media. This will get to diverse community groups including farmers, market women, and road transport workers, among others. This method can handle contemporary health issues in the society as it also give room for feedback. The social media through the use of mobile phones is also a strategic platform for the dissemination of health related items, instructions, methods and issues (Okueso and Akinwusi, 2011).

Computer Assisted Instruction (CAI)

The application of computer uses social cognitive theory and trans-theoretical model in designing content of health behavioural change interventions for health promotion. CAI could change behavioural pattern of drug addicts searching for ways to quitting such habit but couldn't, due to physical dependence. The use of telephone as one of the computer assisted intervention to deliver health instructions, advice and support could promote positive behavior change and the adoption and maintenance of physical activity across the population (Glanz, Rimer and Lewis 2002)..

Traditional and religious leaders as advocates

Traditional and religious leaders are highly respected and influential people in their communities. Their roles and responsibilities in their communities should transcend beyond traditional and religious affairs, as they can act as change agents in communicating key message about health to their community. According to Nigeria Health Watch, 25% of pregnant women go to local or faith institutions to give birth, accounting for 133 maternal deaths between May 2019 to May 2020, out of which 18 deaths occurred in Nigerian faith-based institutions (Thelma and Aloysius, 2021).

Improving the Standards of Nigeria's Primary Health Centres (PHC)

The renaissance of PHC is key in achieving Universal Health Coverage (UHC). According to the World Health Organization, adequate funding and scaling-up PHC interventions across low and middle-income countries could save 60 million lives and increase average life expectancy by 3.7 years by 2030 (WHO, 2021). So if PHC are adequately improved required health infrastructural facilities many health challenges will be tackled as it will be easily accessible to the community, deliver patient centered healthcare services and save a lot lives.

Conclusion

Continuous emphasis on health education and promotion is therefore a sure way to combat emerging health issues in Nigeria, however it need to be adequately enhanced and effectively delivered using these strategic methods so as to cover the whole population and meet up with the current health challenges faced by the nation.

Recommendations

Nevertheless, for health education and promotion to be used as a means of addressing health challenges the following recommendations were suggested:

- i. Emphasis on health education should not be confined to schools alone but also should cut across diverse group of people in either informal settings, rural or urban centres.
- ii. Health education need to also level up and revolve around the ever-changing technology so as to be easily delivered among the populace.
- iii. Government at all level should ensure continuous promotion of health education through adequate funding, capacity building and awareness and sensitization campaign not only when there is an epidemic or pandemic but prior to unforeseen circumstances.
- iv. Health parastatals should utilize health education and promotion as a sustainable tool for preventive medicine rather spending huge finance seeking for cure.
- v. Health education should be made readily available to citizens at no cost and citizens should embrace healthy lifestyles.

REFERENCES

- Adekalu, O.A., Fashanu, T.A., Olaitan, T.R., Ogunsua, J.M., Oyebamiji, A.S., Ibrahim, A.S., Akande, S.A. and Oyebanji, A.O. (2020). Survey on the use of Calcium Carbide as ripening Agent in Ilorin metropolis. *European Journal of Agriculture and Food sciences*, 2(6): 1-6.
- Agbabiaka, T.O., Shitu, T., Agbabiaka, T.O. and Otuyelu, F.O. (2021). Biofilm-forming bacteria and their antibiotic resistance in treated water supplies in Ilorin metropolis, Nigeria. *Ceylon Journal of Science*, 50(2): 199-204.
- Ajala, J.A. (2002). Conception of school health education. Curriculum guidelines in Ajala, J.A. (ed.) *Designing content of the curriculum*. Ibadan: MayBest. Pp 164-175.
- Amina, B. (2021). Effect of Insecurity on Education, Economy and Social Development. *Nigeria Perspective*, Corpus ID 233249353.
- Basch, C.E. (2011). Healthier students are better learners: A missing link in school reforms to close the achievement gap. *Journal of School Health*, 81:593-598.
- Bernard, A.E. (2012). Health Education: Prospects and Challenges in the 21st Century. *Journal of Qualitative Education*, 8(1): 0331 – 4790.
- Charles, R.S., Suriani, I., Poh, Y.L., Norliza, A. and Ibrahim, A.N. (2021). Effectiveness of Health Education Intervention on Water Sanitation and Hygiene Practice among Adolescent Girls in Maiduguri Metropolitan Council, Borno State, Nigeria: A Cluster Randomised Control Trial. *Water*, 13(987): 2-14. <https://doi.org/10.3390/w13070987>.
- Edlyne, E.A. (2020). Health Promotion and Its Challenges to Public Health Delivery System in Africa. *Public Health in Developing Countries - Challenges and Opportunities*, DOI: <http://dx.doi.org/10.5772/intechopen.91859>.
- Fatubarin, A. (2014). Towards A Better Understanding of the Concept ‘Man and his environment through an integrated environment approach’. *European Journal of Biology and Medical Science Research*, 2(3): 49 – 62.
- Glanz, K. Rimer, B.K. and Lewis, F.M. (2002). Health behaviour and health education. Theory, Research and Practice (3rd ed.) San Francisco, ossey-bass 472-480.
- Ihenko, S. and Joseph, E.A. (2020). Achieving Sustainable Development Goals (MDGs): The role of Quality Education and sustainable Laboratory Resources for Teaching and Learning in Secondary Schools. *Int. J. Innovative Soc. & Sci. Educ. Res.* 7 (3):115-125.
- Johnson, B.O. (2010). Roles of health Education in Primary Care Services. *Journal of Environmental and Biological Science*, 12 (4): 48-59.

- National Cancer Institute (NCI) (2013). Formaldehyde. Accessed March 1, 2013. From: <http://www.cancer.gov/cancertopics/factsheet/Risk/formaldehyde>.
- Ogbonna, B.O., Ezenekwe, L.N. and Isidienu, C.P. (2016). Health education and community mobilization in Nigeria; issues and prospects. *International Journal of Community Medicine and Public Health*, 3(6): 1348-1351.
- Okueso, S.A. and Akinwusi, A.T. (2011). Dimensions of Innovate Teaching Strategies for Health Education Programme in Nigeria. *Contemporary Issues in Education, Health and Sports The Way Forward*, 4(1):1-6.
- Oshodi, O.Y., Aina, O.F. and Onajole, A.T. (2010). Substance Use Among Secondary School Students in Urban Setting in Nigeria: Prevalence and Associated Factors. *African Journal of Psychiatry*, 13(1): 52-57.
- Rimande-Joel, R. and Obiechina, G.O. (2021). Challenges Facing Teaching of Health Education in Nigerian Schools. *Trends in Educational Studies Journal*, 13(1): 193-104.
- Sylvester, A.M. (2001). School Health Education and National Development. *The Nigerian Academic Forum*, 1(2): 107-110.
- Thelma, C.A. and Aloysius, U. (2021). Improving Health Education-an Important Step to Achieving Universal Health Care in Nigeria. Nigeria Health Watch news and annual reports.
- WHO, (1948) Constitution of World Health Organization, World Health Organization, Geneva, 1.
- World Health Organization (WHO), (2002). “Global Strategy for Food Safety: Safer Food for Better Health.”
- World Health Organization (WHO), (2015). UN-Water Global Analysis and Assessment of Sanitation and Drinking Water; World Health Organization: Geneva, Switzerland.
- World Health Organization (WHO), (2021). Coronavirus disease (COVID-19) Weekly Epidemiological Update and Weekly Operational Update. Available: <https://www.who.int/emergencies/diseases/novel-coronavirus-2019/situation-reports>.

EDUCATION DELIVERY IN THE MIDST OF NATIONAL CHALLENGES IN NIGERIA

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Abstract

Nigeria is one of many countries currently living amidst what is potentially one of the greatest threats in our lifetime to global education, a gigantic educational crisis, a National Challenges and significant changes in educational institutions. Most pronounced among these is the impact of Covid 19 on the Education Delivery at all levels of education. Other national challenges are also influencing Education Delivery in Nigeria including 2) security challenges 3) emerging new technologies, and 4) farmer-herder clashes. Each of these areas provides challenges for both school settings and teacher educators. These challenges and the obstacles they create must be examined and specific recommendations must be developed for teachers, teacher educators, and policymakers to assist in meeting each challenge. Among these recommendations, research shows that: 1) Government should equip schools with modern digital facilities that can aid online education and it should ensure inclusion of online teaching such as integrated digital learning platforms, videos lessons, broadcasting through radio and TV etc. to supplement the normal classroom teaching even when there is no a pandemic or disaster, 2) To improve both security and Nigeria's damaged educational system as a result of security challenges facing the country, the nation must rebuild and secure schools and basic education must be complemented with targeted vocational training and entrepreneurship initiatives to help young people earn a living, 3) more resources from a variety of sources must be invested in technology-use training so teachers can better prepare students to use technology for easy learning, 4) effective awareness through proper implementation of peace and conflict resolution curriculum contents at both conventional and nomadic schools across the country and building of cattle ranches will reduce the level of farmers-herders clashes in the nation.

Keywords: *Education Delivery, Challenges, Covid 19, Security, Technology, Farmers and Herders.*

Introduction

There has been a great deal of research on Education Delivery. Still, issues including; Covid 19, 2) security challenges, 3) emerging new technologies, and 4) farmer-herder clashes remain challenging for both school settings and teacher educators. This paper highlights the Education

Delivery in the midst of national challenges and analyzes both these challenges and the opportunities that exist for teachers, teacher educators, policy makers, and other practitioners as they work to overcome these challenges. In this context, the challenges that exist for Education Delivery have the potential to result in significant effect for a new generation of students in a rapidly changing world.

Related literature were reviewed on the development of Education Delivery in public schools in Nigeria. It examines the issues and opportunities as well as the goals and strategies for Education Delivery and suggests guidelines to help ensure that emerging curricula are responsive to the needs of students in a rapidly changing world. This review also describes the available research on specific concepts that were chosen for analysis and represented the recent research efforts on the condition of Nigeria education in the midst of current national challenges. It incorporates data derived from various sources, including reviews of literature, journals, conference papers, and websites of education. Ultimately, reactions to the following challenges will dramatically influence the context of Education Delivery in Nigeria which in the future will provide functional education.

1. COVID-19

The corona virus disease 2019 (COVID-19) pandemic in Nigeria is part of the worldwide pandemic caused by severe acute respiratory syndrome. The disease is most contagious when a person's symptoms are at their peak though it is possible for someone without symptoms to spread the virus. Droplets containing the virus can also land on nearby surfaces or objects and when other people touch such surfaces or pick up the objects and then touch their nose, eyes, or mouth the virus spreads (Hui, 2020). As part of measures to contain the spread of COVID-19 in Nigeria, the Federal Ministry of Education, through the Permanent Secretary in the Ministry, on March 19th ordered the immediate closure of tertiary institutions, secondary and primary schools across the nation over the outbreak of the disease in the country. All public and private schools have to shut the doors of their schools following the government directive. Considering the state of Nigeria's education sector, pertinent questions arose: Do schools in Nigeria have the technology to cater for the million of students affected? Do households have the facilities to engage their children in remote learning? Do teachers have the resources to deliver live lessons or record a massive open online course (MOOC) styled lessons?

Unlike other countries, the Nigeria Federal Ministry of Education's school-closure directive did not come with any clear-cut policy measures on how to mitigate learning disruptions for children or how to address the digital divide. It follows that education is not paramount to the Nigerian government at that time. The only well-documented response is the Nigeria Education in Emergency Working Group Strategy published on April 7th 2020. The objective of the strategy is to mitigate the negative impact of school closures on students and teachers in North-East Nigeria. While government efforts in the health and economic sectors must be commended, ignoring the education sector would be disastrous.

According to Tolulope, & Akinbami, (2020), the closure of schools, colleges and universities does not only interrupt the teaching of students in Nigeria, it also coincides with a key assessment period and many examinations have been postponed or cancelled as a result of

COVID-19. The implication of this on candidates is that, thousands of students will be forced to defer the start of their studies for their undergraduate studies to a later year. Also, many teachers (especially private school teachers) were not paid during the time schools were locked up. This made some of them to be unable to provide adequate needs for their families. COVID-19 pandemic has created a lot of havoc in the lives of many teachers and they face a lot of psychological problems such as stress, fear, anxiety, and depression that leads to lack of focus and concentration.

2. Security Challenges

According to Aydin, et al., (2017) Nigeria's breakdown in security is particularly attacking education, notably in the country's north. The 12-year-old Boko Haram insurgency and the more recent rise in students kidnapping have combined to displace more than two million people and forced the closures of an estimated 600 schools as of early this year. Families also have withheld their children from classes with this year's wave of kidnappings of students. One must recall that Boko Haram stunned Nigerians and the world in 2014 by kidnapping 276 girls from their school in the northeastern town of Chibok. Since December 2020, criminal gangs have emulated Boko Haram's tactic committing over 10 mass abductions, totaling more than 1,000 school children, to collect ransoms across northern Nigeria. Many smaller attacks go unreported. Bandits for years have committed small scale kidnappings of highway travelers, but now they used political pressures from school kidnappings to force more lucrative payoffs. Gangs of armed men in convoys of motorcycles and trucks have made midnight assaults on government and religious boarding schools, killing staff who resist and even executing children to enforce their demands.

The violence is only deepening a years old educational crisis that has been worst for northern Nigerians and for girls. For many years, the government and UNICEF have estimated that about 8.7 million to 13 million primary school-aged children the most of any nation worldwide have been out of classes, and that 60 percent of them have been girls. The northeastern state of Borno, as the epicenter of the Boko Haram insurgency, has had nearly 75 percent of its children out of school. The erosion of education for a generation of school children in the north will reduce their abilities to earn a living and bring skills to the reconstruction of their communities. It will increase their risk of being radicalized amid the region's conflicts (Aydin et al. 2021)

3. Emerging New Technologies

Emerging technologies also present a challenge to education. Research has shown that today's students love video games and can't put down their smart phones, iPods, or social networks (Aydin et al. 2021). Moreover, Murphy, (2015) emphasized that, development of educational technologies is changing our beliefs about how learning occurs, resulting in increased pressure from the government as well as shifts from teacher- to learner-centered approaches to instruction.

Moreover, teachers and teacher educators face several challenges in using technology successfully in their classrooms. One challenge that Harven, (2013) has emphasized is that teachers and school leaders often see technological experimentation as outside the scope of their job descriptions. A second is that some experienced teachers prefer using approaches they already understand and do not utilize the technology they have been given. They have been teaching for years and do not want to incorporate something new into their time-tested lesson

plans. Some schools are pushing instructors to incorporate technology into their syllabi but when that technology is poorly taught, it is not used at an optimal level. Any teacher given a high-tech program and expected to teach it in the classroom deserves proper training, but sometimes that training isn't provided (Altuna, Aydin, Ozfidan, & Amenabav, 2013).

A responsive curriculum goes beyond the ever-changing influences of technology and responds to changes in society and students' learning needs (Aydin, 2013d; Parson & Beauchamp, 2012). In this context, teachers, teacher educators, and policymakers must embrace the power of technology to make learning relevant for all students and adults. Harven, (2013) argued that using technological tools in teaching gives students the opportunity to engage in the real world, helping them to increase their understanding and develop creativity and innovation skills. As a result, educators need continuous professional development that allows them to use the newest continually evolving technology to plan their courses and improve their pedagogy.

4. Farmer-Herder Clashes

According to Anne, (2021) The Middle Belt region of Nigeria has faced prolonged violent clashes between the predominantly Christian farmers and the mostly Muslim cattle herders. At the core of the conflicts are disputes over access and rights to land and water resources and rapid desertification which has changed the grazing patterns of cattle. These clashes are not necessarily new, but since 2015, the disputes have become more frequent and violent. In 2018 alone, more than 2,000 people were killed in such clashes - more than the number killed in the past two years combined. The conflict now claims an estimated six times more than the Boko Haram crisis. The dispute is being politicised and is stirring ethnic and religious tensions, which is very dangerous in a deeply divided country like Nigeria. Leaders at all levels must find inclusive and creative ways of addressing and deescalating this complex conflict.

Nigeria's federal and state governments are struggling to implement a National Livestock Transformation Plan that seeks to curb the movement of cattle across the country and reduce deadly herder-farmer conflict. While the Plan has earned the endorsement of many state governments, it faces significant challenges. Deficient political leadership, popular misperceptions about its purpose, budgetary constraints aggravated by the COVID-19 pandemic, a lack of personnel with the expertise to carry it out and widespread insecurity are all hindering progress. If the Plan fails – as previous initiatives to modernise livestock management did – herder-farmer violence could escalate. Federal and state governments should do more to publicise the Plan and win the support of both herders and farmers. These authorities should also work with donors and investors to fill funding gaps and to build capacity for implementation. Finally, Abuja should make sure the Plan's enactment takes into account the projected impact of climate change and also develop a strategy for dealing with non-Nigerian migratory herders (Anne, 2021)

Farmer-herder tensions will diminish when pastoralists feel included in decision making, especially concerning land resources, and when they feel their mobility is secure and presence respected. Farmers must feel confident their livelihoods will not be undermined by changes in laws regulating access to land and its use and that their own settlements and fields are secure.

Security forces can and need to reinforce rather than destabilize these preconditions for violence reduction.

Conclusion

This paper has highlighted some challenging issues confronting Education Delivery in the midst of National Challenges. Teachers, teacher educators, policy-makers and families all need to assist in overcoming these challenges to ensure the continued functioning of educational systems that meet society's needs. This paper addressed four major challenges to Education Delivery in Nigeria. The first and perhaps most relevant challenge is covid 19 pandemic. The Second challenge is insecurity (specifically kidnapping for ransom and Boko Haram insurgency) also affect Education Delivery throughout the country. A third challenge facing Education Delivery in the midst of national challenges is the role of emerging technologies in school settings. The uses of social media, Twitter, Facebook, Instagram, linkedin, and whatsApp have become a vital part of our youth's lifestyle. As the role of technology in schools has increased, however, differences in its use have arisen between the younger generation of students and the older generations of teachers. The final challenge examined in this paper relates to the farmers and herders clashes across the nation which negatively effects the proper implementation of curriculum in the schools. Killing of people and destroying of properties including houses, farm products and animals can lead to great danger in the country.

Recommendations

1. The first and perhaps most relevant challenge is covid 19 pandemic. This challenge will require schools to adapt their Education Delivery, structures and programs to accommodate and meet the needs of a diverse student body through the use of online lesson across the nation. These adaptations will not only assist in serving students, but will also support the application of e-learning in the country.
2. Secondly, to improve both security and Nigeria's damaged educational system, as a result of Kidnapping and Boko haram, the nation must rebuild and secure schools and basic education must be complemented with targeted vocational training and entrepreneurship initiatives to help young people earn a living,
3. A third challenge facing Education Delivery in the midst of national challenges is the role of emerging technologies in school settings. The uses of social media, Twitter, Face book, Instagram and whatsApp have become a vital part of our youth's lifestyle. As the role of technology in schools has increased, however, differences in its use have arisen between the younger generation of students and the older generations of teachers. To bridge this gap, the federal government, states, and school should increase investment in training to enable teachers to better prepare students to use technology (Aydin, 2013d)
4. The final challenge examined in this paper relates to the farmers and herders clashes across the nation which negatively effects the proper implementation of curriculum in the schools. Killing of people and destroying of properties including houses, farm products and animals can only be reduce if there is an effective awareness through proper implementation of peace and conflict resolution curriculum contents at both conventional and nomadic schools across the country and creating ranches and improving grazing reserves in the nation.

REFERENCES

- Altuna, J., Aydin, H., Ozfidan, B., & Amenabav, N. (2013). The digital user of social Networks: A comparative, transcultural and intergenerational study. *International Online Journal of Educational Sciences*, 5(3), 598-610.
- Anne, I. M. (2021). Boko Haram and now banditry force children out of schools, risking a 'Lost Generation.' Retrived on 15th Oct. 2021 from <https://www.usip.org/publications/2021/07/how-mass-kidnappings-students-hinder-nigerias-future>
- Aydin, H. (2013d). Students and teachers' perceptions on technology enhanced Turkish language learning environment in Turkey. *Educational Research and Reviews*, 8(13), 986-996.
- Aydin, H., Ozfidan, B. & Carothers, D. (2021) Meeting the challenges of curriculum and instruction in school settings in the United States *Journal of Social Studies Education Research* 8 (3),76-92.
- Harven, M. (2013). Top five problems with technology in education today. Retrieved from <https://edtechtimes.com/2013/11/06/top-5-problems-technology-education-today/>
- Hui DS, (2020). The continuing epidemic threat of novel coronaviruses to global health—the latest novel coronavirus outbreak in Wuhan, China. *International Journal of Infectious Diseases*. 2020;91:264-266.
- Murphy, A. (2015). *Curriculum: Past, present, and future*. Australia. Toowoomba, Queensland: Australian Digital Futures Institute Press.
- Parsons, J. & Beauchamp, L. (2012). *From knowledge to action: Shaping the future of curriculum development in Alberta*. Alberta, Canada: Alberta Education Press.
- Tolulope, A.A & Akinbami, E. O (2020). Impact of COVID-19 on the Nigerian educational system: Strengths and challenges of Online/Virtual education. *Asian Journal of Education and Social Studies*, 13(1): 26-35.

AWARENESS AND USE OF SEARCH ENGINES BY NIGERIA CERTIFICATE IN EDUCATION (NCE) STUDENTS OF FEDERAL COLLEGES OF EDUCATION IN NORTHWESTERN NIGERIA

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Abstract

The study investigates the awareness and use of search engines by NCE students of Federal Colleges of Education in Northwestern Nigeria. The objectives of the study were to find out the Students' awareness about search engines, the types of search engine used the frequency and the purpose of using the search engines; the challenges faced by the students while using the search engines. Quantitative research methodology using a cross sectional survey design was used. A sample size of 420 respondents was used; questionnaire was the instrument used for data collection. The data collected were analyzed using descriptive statistics. Findings from the study revealed that there was high level of awareness of search engines among the students. It was also discovered that colleagues were the major source of awareness about search engine among the respondents. The study found that NCE students used Google, Google scholar, Ask and Yahoo search engines; study and research were the major factors facilitating the use of search engines by the respondents. Download delay and lack of searching skills were the challenges associated with the use of search engines by the respondents. The study concluded that NCE students of Federal Colleges of Education in Northwestern Nigeria were highly aware of search engines. Lastly the study recommended the introduction of a course on Internet Searching, allocation of more funds to the colleges to enable regular subscription of internet bandwidth and the need for government to enforce network providers to reduce the tariff they charge for Internet connection.

Keywords: Search Engines, Awareness, Use, NCE Students

Introduction

Information and communication technologies (ICTs) particularly computers and the Internet has become an integral part of today's educational system. It is used in education to enhance sharing of information, increase collaboration among students, academicians, and institutions through the provision of online information resources.

With this current technological development in the provision of online information resources, students in Nigeria are now using Desktop, laptops computers or smart phones to connect to the Internet to access the online information. This situation has changed the information seeking strategies of Nigerian students to depend more on Internet resources for their research, assignment and other academic activities. In view of this, lacking requisite knowledge and skills about search engines affects the student's ability to use and harness the immeasurable advantages of the Internet.

A search engine is software that is used to retrieve information from the Internet. The information that can be retrieved may include such forms as text, pictures, images, and graphics. Although a search engine is used to retrieve information not all search engines are the same. This therefore makes it mandatory for Internet user to know and be aware about the strength and the weaknesses of the search engines for successful retrieval of relevant information from the Internet.

Awareness is noted by Azubuike (2016) to be the ability to know or have knowledge of the existence of different search engines by the library user and how he can utilize these search engines to retrieve information resources to satisfy his information needs. Lacking requisite knowledge about search engines could affect the student's ability to use and harness the immeasurable advantages of the Internet to satisfy their information needs.

Hence, the study investigates the awareness and use of search engines by NCE students of Federal Colleges of Education in Northwestern Nigeria, the study adapted quantitative research methodology using cross sectional survey design

Objectives of The Study

The main objective of this study is to investigate the awareness and use of search engines by NCE students of Federal Colleges of Education in Northwestern Nigeria. while the following specific objectives are:

1. To find out search engines awareness among the FCE students in Northwest Nigeria.
2. To determine the frequency of Search Engines use by the students under study.
3. To identify the types of search engines used by the students under study.
4. To find out the purposes of using search engines by the students under study.
5. To identify the challenges encountered by FCE students while retrieving internet resources.

Literature Review

Awareness about Search engines

Awareness of search engines in this context is the ability to know or have the skills and the knowledge to distinguish between the different tools that can be use to search for information from the Internet. Awareness on the other hand is noted by Azubuike (2016) to be the ability to know or have knowledge of the existence of different search engines by the library user and how he can utilize these search engines to retrieve information resources to satisfy his information needs. Lacking requisite knowledge about search engines could affect the student's ability to use and harness the immeasurable advantages of the Internet to satisfy their information needs.

This placed awareness about the existence of search engines to be more important than the actual use. An Internet user must know the existence of the search engine, and how to use it to retrieve resources from the Internet. Onuh and Ekwueme (2020), while discussing awareness of library resource, posited that awareness is the process of knowing about the existence of library resources and how they can be effectively utilized to satisfy the information needs of the users. But, Akpojotor (2016) cited in Onuh and Ekwueme (2020) noted that Awareness is knowledge about something that exists or understanding of a situation or subject at present based on information or experience. Therefore awareness in general perspective entails knowing the existence of a particular situation which is based on information or experience.

According to Taiwo (2009) cited in Abdullahi, Mohammad and Amao (2021) awareness means knowledge. Lack of awareness could hinder the use of the various search engines. Lack of awareness of the various search engines, among researchers in higher institution will bring to its non-usage, therefore an essential factor in the use of search engines is awareness. Doris (2012) noted that a good rule of awareness is that someone needs to be exposed to services before he/she is fully aware of the service.

Studies by many scholars, (Msurshima 2010; Mark, 2012; Akparobere & Oghale, 2015; Imeniwe 2018) on awareness and use of search engines by undergraduate students in developed countries, showed lack of awareness about search engines. Majority of these studies indicated Google and Yahoo to be the only search engines known by their respondents. Abdullahi, Mohammad and Amao (2021) conducted a research on awareness and use of search engines by the University lecturers in Bauchi State. Result reveals that majority of the respondents had a moderate level of awareness about search engines. The fact that not all academic staffs are aware about search engine is an indication that the institutions do not encourage their staff to use the Internet. On answer to their source of awareness, the results showed no institutional commitment to the provision and use of the Internet, because majority of the respondents indicated that their awareness came through friends and colleagues as well as through self-training.

Search engine

Search engine is a component of every web browser, i.e every web browser use the services of search engine to find requested resources. Search engines, sometimes referred to as Crawlers, spiders, wanderers or robots, are software programmes that are designed to search for information on the Internet. Search engines visits all the computers connected to the internet to index their contents. Gwarzo (2020) described Search engines as automated software that crawls through all the computers connected to the Internet and indexed the contents of what they found by keywords. The list of the keywords are then stored in a database on the computer hosting the search engine's software. When a user issued a query the browser refer the query to the search engine, which in turn search the database and retrieved all the documents containing those keywords that matched the query. This is the reason why results for queries run on search engines tend to be very fast and very large because every word in the query issued are retrieved, running into millions. It should also be noted that a search engine is a useful tool for Internet users as well as students in the quest for information to satisfy information needs. This makes

awareness about search engines very important to not only student's academic performance, but also whoever wants to find good resource from the Internet.

Some search engines, such as Google, store all or part of the source page (referred to as a cache) as well as information about the web pages, where as others, such as AltaVista, store every word of every page they find. This cached page always holds the actual search text, since it is the one that was indexed, so it can be advantageous when the content of the current page has been updated, and the search terms are no longer in it. Because every word found in a document is indexed this makes it unwieldy, retrieving several millions of records in a simple search. This makes it necessary for the user to know what he wants, how to combine keywords that will enable the search engine to provide results close to the users specifications.

Types of Search engines

Search engine can be generally classified in to the following classes:

- 1. General Purpose Search Engines:** They index a sizable portion of the Web across all topics and domains to retrieve the information. It uses crawler mechanisms in order to scan as many web documents as possible (Garg & Sharma, 2012) examples are Alta Vista, MSN, Lycos, Excite e.t.c
- 2. Full-Text Search Engine:** Full-Text Search Engine retrieves information from the Internet, establishes a database and retrieves the records according to the user's query. (Jain, 2013). Example MySQL
- 3. META Search Engine:** It provides search results from multiple search engines simultaneously according to a user's query. (Jain, 2013). Metasearch engines fetch results from other search engines. The fetched results are combined and ranked again according to their relevancy. These search engines were useful when each search engine had a significantly unique index (Tarakeswar& Kavitha, 2011). Also, Levene, (2010) sees the Metasearch engine as an engine that combines results from several search engines and presents one ranked list to the user through a common interface. No search engine is perfect, and each search engine may perform better than the others in some circumstances, so in principle, a Metasearch engine may exceed the quality of the individual search engines it aggregates. Williams and Sawyer, (2007) opines that a Meta Search Engines allows a user to search several search engines simultaneously. Examples are Dogpile, Ixquick, Metacrawler, Profusion, Vivisimo, Clusty, Sperse, etc.
- 4. Multi-Threaded Search Engine:** (Ross, 1998) these search engines allow the user to search multiple databases simultaneously, via a single interface. While they do not offer the same level of control over the search interface and search logic as do individual search engines, most of the multi-threaded engines are very fast. Recently, the capabilities of meta-tools have been improved to include such useful features as the ability to sort results by site, by type of resource, or by domain, the ability to select which search engines to include, and the ability to modify results. Example Dogpile, Inference Find, Metacrawler and ProFusion, etc
- 5. Vertical Search Engine:** Vertical Search Engine focuses on the specific search field and searches demand (Jain, 2013) example findlaw.com, mocavo, Nuroa, Trulla, yebole.t.c.
- 6. Crawler-based Search Engines:** Crawler-based search engines according to Tarakeswar& Kavitha, (2011) contain three parts. The first part is the 'Crawler' (bot or robot or spider). It is used to wander the web and create listings of web pages. The second part is the 'Index', which is a huge collection of copies of web pages and the third part is the 'Search

Engine Software’ which ranks the results. Because the crawler in this engine searches the web regularly, it provides updated information. Google, Live Search, Ask and most other search engines are crawler-based.

7. Hybrid Search Engines: Tarakeswar & Kavitha (2011) opines that “Hybrid search engines include the features of crawler-based search engines and human-powered directories. Currently, some search engines are using both features to provide effective results. MSN, Google, and Yahoo are some examples”.

8. Specialized/ Subject Specific Search Engines: Garg & Sharma, (2012) opines that these Search Engines are specialized in an area and provides a huge collection of documents related to that specific area. E.g., PubMed, a Search Engine specialized in medical publications. It offers a collection of millions of research papers, articles; journals related to biomedical sciences, life sciences, etc

Methodology

Quantitative research methodology was used for the study. The population of the students study comprised of fifty thousand eight hundred and sixty-five (50,865). Simple random sampling procedure with the aid of Yemane (1967) formula was used to calculate the sample size of the study. Four hundred and twenty (420) was the recommended sample size. The data for the study was collected using a questionnaire. The questionnaire was self-developed and was subjected to contents validity by experts in the department of Library and Information Science Bayero University Kano and Yusuf Maitama Sule University Kano. The Questionnaires consisted of five sections dealing with the objectives of the study. Section A collected demographic information, section B is on the awareness and use of search engines by the students, section C deals with types of search engines used, section D is on the purpose/s of using search engines, section E deals with the factors facilitating the use of search engines and challenges encountered by the students while using search engines.

Response Rate

Four hundred and twenty (420) questionnaires were administered to NCE students in the five colleges of education in the Northwestern zone of Nigeria, namely FCE (T) Bichi, FCE (T) Gusau, FCE Kano, FCE Katsina and FCE Zaria. Three hundred and seventy-five (375) questionnaires representing eighty-four per cent (84%) were returned duly completed as shown in the table below. Quantitative method of descriptive analysis was used in analyzing the data collected.

Table 1: Response Rate

S/N	Name of the Institution	Number of Questionnaires		Percentage %
		Administered	Returned	
1	FCE (T) Bichi	99	90	24
2	FCE (T) Gusau	86	73	19.4
3	FCE Kano	95	90	24
4	FCE Katsina	45	40	10.6
5	FCE Zaria	95	82	21.8
	Total	420	375	100.0

Findings and Discussions

This section deals with the presentation of the findings and discussion of the results.

Awareness about search engines

Table 2: Awareness about Search Engines

S/N	Options	Frequency	Percentage (%)
1	Yes	240	64%
2	No	135	36%
	Total	375	100

Table 2 reveals that more than half of the respondents 240 (64%) were aware of search engines while less than half of the respondents, 135 (36%) were not aware of search engines. Although, majority of the students in colleges of education were aware of search engines, the number of those not aware is significant that can draw the attention of the college authorities.

In a related question, the respondents were asked to tick from a list all the search engines they were aware. This information is presented in table 3.

Table 3: Student's Awareness on Different Types of Search Engines

S/N	List of Search Engines	F
1	Ask	120
2	Alta Vista	24
3	Bing	52
4	Google	240
5	Google Scholar	60
6	Wikis	40
7	Yahoo	70

Table 3 shows that majority of the respondents 240 (100%) indicated Google, followed by Ask with 120 (50%), then Yahoo 70 (29.2%), Bing 52 (21.7%), wikis 40 (16.7%), AltaVista 24. This shows that majority of the students in colleges were highly aware of Google search engines. This tallied with the findings of (Msurshima 2010; Mark, 2012; Akparobere & Oghale, 2015; Imeniwe 2018) who in their various studies found Google and yahoo to be the most known search engines.

Table 4: Sources of Search Engines Awareness

S/N	Sources of Awareness	F	%
1	Colleagues	140	58.3
2	Literature	70	29.2
4	Library Awareness Campaign	30	12.5
9	Total	240	100

Table 4 reveals that more than half 140 (58.3%) of the respondents indicated that their sources of awareness with the search engines was from colleagues; followed by (70 29.2) respondents that

indicated consulting the literature; Library awareness campaign attracted 30 (12.56%). This shows that the colleagues were the major source of search engines awareness in colleges. This finding is also consistent with the findings of Abdullahi, Mohammad and Amao (2021) who found that their respondents learnt to use the Internet through friends and colleagues as well as through self-training.

Table 5: Types of Search Engine used by the Students (Tick as applicable)

S/N	Options	F
1	Ask	70
2	Altavista	21
3	Bing	66
4	Google	240
5	Google Scholar	80
6	Yahoo	69
7	Wikis	30

Table 5 shows that majority of the respondents 240 (100%) indicated Google followed by Google scholar 80 (33.3%); Ask 70 (29.2%); Yahoo 69 (28.75%), Bing 66 (27.5%); Wikis 30 (12.5%). This shows that students in colleges were the frequent users of Google search engines.

Table 6: Purpose of Using Search Engines

S/N	Purpose of using Search Engines	F	%
1	For Study	240	100
2	For Assignment	220	91.7
3	For Research	240	100
4	For Communication	200	83.3
5	For Entertainment	105	43.75
6	Others	35	14.6

Table 6 shows that majority of the respondents indicated study as the purpose of their search engines use with 240 (100%) followed by research 240 (100%); assignment 220 (91.7%); communication 200 (83.3%); entertainment 105 (43.75%) and others 35(14.6%). This shows that students in colleges use search engines for study and research.

Table 7: Types of Information Resources Used

S/N	Type of Information Resources	F	%
1	E-Journals	150	62.5
2	E-Books	180	75
3	Conference Proceedings	54	22.5
4	Newspapers	240	100
5	Projects	103	42.9
6	Others	29	12.1

Table 7 shows that the majority of the respondents 240 (100%) indicated newspaper, followed by e-Books 180 (75%); e-Journals 150 (62.5%); projects 103 (42.9%) then others 29 (12.1%). This

shows that newspapers were the information resources consulted by the majority of students in colleges

Table 8: Challenges Encountered by the Students while Using Search Engines

S/N	Challenges Encountered using search engine	F	%
1	Download delay	240	100
2	Lack of searching skills	179	74.6
3	Failure to find information	87	36.3
4	Produces large mass of irrelevant information	56	23.3
5	Power outages	126	52.5
6	Inaccessibility of some websites	43	17.9
7	Problem in the formulation of search terms	35	14.6
8	Others	22	9.2

Table 8 reveals that majority of the respondents indicated download delay as the major challenge 240(100%) followed by lack of searching skills 179 (74.6%), power outages 126 (52.5%), failure to find information 87 (36.3%), produces large mass of irrelevant information 56 (23.3%), inaccessibility of some websites 43 (17.9%), problem in formulation of search terms 35 (14.6%) and others 22 (9.2%). This shows that download delay was the major challenge encountered by the students in the colleges.

Table 9: Solutions to the Challenges on Retrieving Internet Resources

S/N	Options	F	%
1	Organized workshop & Seminar	123	51.3
2	Teach Information Retrieval skills to students	240	100
3	Improve network service	240	100
4	Reduced cost of internet provision	94	39.2
5	Awareness program	53	22.1
6	Others	11	4.6

Table 9 shows that majority 240(100%) of the respondents suggested teaching of Information retrieval skills to students; followed by improved network service 240 (100%); organized workshop and seminar 123 (51.3%); reduced cost of internet provision 94(39.2%); awareness program 53 (22.1%); others 11 (4.6%). This shows that students in colleges suggested teaching of Information retrieval skills.

Discussion

From the analysis of this study, it was found that more than half of the respondents were aware of search engines this contradicts the findings of Sunday & Ogoegbunam (2020) whose finding reveals low awareness. Also findings on the awareness of different search engines shows that majority of them were aware of Google followed by Yahoo search engines this affirms the findings of Sivasubramanian & Gomathi (2019) whose findings reveals that 66% of the respondents are using Google search engine.

Regarding the sources of awareness, the analysis indicated colleagues as the major sources of search engines awareness; it is in agreement with the findings of Osaheni, Emmanuel, & Aminu

(2021) whose findings reveals friends and colleagues as the sources of awareness of search engines among the students of Auchi Polytechnic.

Findings on the frequency of search engines use reveals that majority of the respondents use search engines daily this is in agreement with the findings of Sara, Jia, & Ashman (2018) that most of the students indicated that they use general purpose search engines daily as learning tool. About the purpose of using search engines the analysis reveals that majority use search engines for study followed by research, this is in agreement with the findings of Osaheni, Emmanuel, & Aminu (2021) that majority of the respondents indicated study/assignment and research as the purpose of their search engines use.

Furthermore, the analysis found that majority of the respondents consult newspaper followed by E-book as information resources which contradicts the findings of Egborongbe, (2011) and Shafi & Maqbool, (2012) in different studies that showed majority of the respondents preferences to the use e-journals. Findings also reveal that Google is the most often use search engines by the students of FCE. This is in agreement with the findings of Sunday & Ogoegbunam, (2020) whose findings reveals Google as the most used search engines among students.

The findings on challenges encountered by FCE students revealed that, majority of the FCE students encountered a problem of downloading delay, and lack of searching skills, this finding is in agreement with the findings of Osaheni, Emmanuel, & Aminu (2021) whose findings reveals poor internet connectivity, power failure and lack of searching skills as the problems facing students on the use of search engines.

From the findings it revealed that users suggested some solution in order to overcome these problems, the researcher observed that majority of the respondents emphasized the teaching of information retrieval skills and improvement of network service followed by organizing workshop and seminars to students would help in tackling the challenges.

Conclusion

Based on the findings of this study, it is concluded that the NCE students of FCE in Northwestern Nigeria were highly aware of Search Engines. Even though libraries need to be pivotal to information literacy, they do not play a major role in creating awareness of search engines among the NCE students of FCE in Northwestern Nigeria because the study found that, the major source of awareness among the NCE was colleagues. The conclusion that can arrive at is that the NCE students are not utilizing search engines effectively and efficiently which hinders them from getting the valuable resources from the Internet.

Recommendations

Based on the findings of this study, the following recommendations were made:

1. There is need for the introduction of a course on Internet Searching as it is done in universities
2. Allocation of more funds to colleges to enable regular subscription of Internet bandwidth.
3. Government should enforce/sensitize network providers to reduce the price of data subscription to enable easy access to Internet.

REFERENCES

- Abdullahi, A. Mohammad, A.N. and M. A. Amao (2021). Awareness and Use of Search Engines for Information Retrieval by Lecturers of Universities in Bauchi State. *Journal of Humanities and Social Science*, 26(4), 33-40.
- Adams, B. (2010). The cautious Faculty: their Awareness and Attitudes Towards Institutional Repositories. *Malaysian Journal of Library and Information Science*, 14 (2), 17-39.
- Cavus, N. and Kezban, A. (2011). Which search engine is the most used one among University Students. *The Online Journal of Science and Technology*, 1 (1).
- Egborongbe, H. S. (2011). *The Use and Impact of Electronic resources at the University of Lagos*. Retrieved 2018, from <http://digitalcommons.ul.edu/libphilprac/472>
- Eke, H. N., Omekwu, C. O. and Agbo, J. (2014). *Internet Search Strategies Employed by Library and Information Science Students of University of Nigeria for Research*. Retrieved October 20, 2016, from <http://digitalcommons.unl.edu/libphilprac/1194>
- Fasae, J. K. and Aladeniyi, F. R. (2012). *Internet Use by Students of Faculty of Science in two Nigerian Universities*. Retrieved August 4, 2016, from <http://digitalcommons.unl.edu/libphilprac/763>
- Fordjour, R., Badu, E. E. and Adjei, E. (2010). The prospect and challenges of Information Retrieval by University Students: A case study of post graduate students of the University of Ghana, Legon. *48th Agricultural Economists Association of South Africa (AEASA) Conference*. Cape Town.
- Garg, D. and Sharma, D. (2012). Information Retrieval from the Web and its Evaluation. *International Journal of Computer Application*, 40 (3), 0975-8887.
- Gregory, S. (2017). *Inetasia.com*. Retrieved February 10, 2017, from <http://www.inetasia.com/resources/articles-importance-of-search-engines.html>
- Gwarzo, S. M. (2020) Internet as a Tool for Promoting Equal Access to Education in Nigeria *Bayero Journal of Education in Africa* 8(1), 313-320
- Hawking, D. (2004). Challenges in enterprise search. *Proceedings of the Australasian Databases*, (pp. 15-26). Dunedin, Newzealand.
- Hong, Y. and David, K. (2007). Pacific Symposium on Biocomputing. *A Cognitive Evaluation of Four Online Search Engines for Answering Definitional Questions Posed by Physician*, 12, 328-339.

- Jadhav, R. J., Gupta, O. and Pawar, U. T. (2011). Significant Role of Search Engine in Higher Education. *International Journal of Scientific and Engineering Research*, 2 (4), 1-5.
- Jain, A. (2013). The Role and Importance of Search Engines and Search Engines Optimization. *International Journal of Emerging Trends and technology in Computer Science (IJJETTCS)*, 2 (3), 99-102.
- Kamba, M. A. (2009). Harmonizing the Use of Research Terminologies: an explanation and clarification of the meaning of some research concepts. *The African Symposium: An Online Journal of African Educational Research Network*, 9 (2), 99-110.
- Kaur, M., Bhatia, N. and Singh, S. (2011). Web Search Engines Evaluation Based on Features and End User Experience. *International Journal of Enterprise Computing and Business Systems*, 1 (2), 14.
- Kaya, S. and Durmus, A. (2010). Pre-service teachers' perceived internet self-efficacy and levels of internet use for research. *Procedia-Social and Behavioral Sciences*, 2 (2), 4370-4376.
- Khan, S. A., Khan, A. A., and Bhat, R. (2011). *Use of ICT by Students. A Survey of Faculty of Education at IUB*. Retrieved from <http://www.sciencedirect.com>
- Khare, S. K., Thapa, N. and Sahih, K. (2007). Internet as a Source of Information: A Survey of Ph.D. Scholars. *Annal of Library and Information Studies*, 54, 201-206.
- Koolen, M. H. (2011). *The Meaning and Structure: The Value and Link Evidence for Information Retrieval*. Retrieved September 24, 2016, from <http://hdl.handle.net/11245/1.343338>
- Kothari, C. R. (2004). *Research Methodology Methods and Techniques* (2nd ed.). New Delhi: New age international.
- Kumar, R. (2014). Internet access and use among students of physical education: a study of Kurukshetra. *A Journal of Information Science Theory and Practice*, 2 (2), 59-68.
- Kuyoro, S. O., Okolie, S. O., Kanu, R. U. and Awodele, O. (2012). Trends in web-based search engine. *Journal of Emerging Trends in Computing and Information Sciences*, 3 (6), 942-949.
- Levene, M. (2010). *An Introduction to Search Engines and Web Navigation*. New Jersey: John Wiley.
- Lewandoski, D. (2009). Retrieval Effectiveness of Search Engines on Navigational Queries. *ASLIB Proceedings*, 61, pp. 1-9.

- Lian, S. and Huang, H. (2003). An Investigation of Userattitude toward Search Engines as an Information Retrieval Tool. *Computers in Human Behaviour*, 19, 751-765.
- Maharana, B., Sethi, B. B. and Behara, S. (2010). Use of Internet and e-resources by the Students of Business Administration Sambalpur University India. *International Journal of Library and Information Science*, 2 (3), 45-53.
- Malik, A. and Mahmood, K. (2009). Web Search Behaviour of University Students: A Case Study at the University of Punjab. *Webology*, 6 (2).
- Malik, S. (2014). A Comparative Study of Two major Search Engines Google and Yahoo. *Oriental Journal of Computer Science and Technology*, 7 (1).
- Mulla, K. R. (2011). *Use of Electronic Resources by Faculty Members in HKBK College of Engineering: A Survey*. Retrieved December 14, 2014, from <http://digitalcommons.unl.edu/cgi/viewcontents.cgi?article=1265&context=libphilprac>
- Nikolopoulou, K. and Gialamas, V. (2011). Undergraduate Students Information Search Practices. *Themes in Science and Technology Education 4(1)*, 21-23.
- Njoku, C. (2019) Here are 5 security challenges Nigeria's Leader must tackle. webforum.org/agenda/2019/02/5-security-challenges-facing
- Nwokedi, V. and Sani, A. (2009). Use of search engines for academic activities by the academic staff members of the Faculty of Natural Sciences, University of Jos. *The Information Technologist*, 6 (2).
- Nwosu, O. and Anyira, I. E. (2012). *The use of Google and Yahoo by internet users in Nigeria*. Retrieved September 20, 2016, from <http://www.digitalcommons.unl.edu/libphilprac/779>
- Nyoro, M., Kamau, J. W., Wayenbi, G. W., Titus, W. S. and Dindo, W. A. (2015). Review of Technology Acceptance Model Usage in Predicting e-commerce Adoption. *International Journal of Application on Innovation in Engineering & Management*, 4 (1), 1-4.
- Oluwadamilola, A. K. (2019). Nigerian Economy Challenges; Causes and Way Foward. *Journal of Economics and Finance*, 10(2), 78-82.
- Osaheni, O., Emmanuel, C., & Aminu, M. U. (2021). Use of Search Engines by Students of Auchi Polytechnic, Auchi, Edo State Nigeria. *International Journal of Academic Library and Information Science*, 9(6), 335-342.
- Onwuchekwa, E. O. and Jegede, O. R. (2011). Information Retrieval Methods in Libraries and Information Centres. *African Research Review an International Multi disciplinaryJournal*, 5 (6), 102-120.

- Rajeev, M., Asha, Gurmeet, K. and Sapna, R. (2015). Use of Internet & Electronic Information Resources by Teachers & Students of Physiotherapy College of Punjab. *American Journal of Educational Research*, 3 (7), 886-892.
- Rieger, O. Y. (2009). Search engine use behavior of students and faculty: user perceptions and implications for future research. *Peer-reviewed Journal on the internet*, 14 (12), 13-18.
- Ross, T. (1998, May). *Centre of Excellence in Educational Technology (CEET)*. Retrieved January Sunday, 2017, from Centre of Excellence in Educational technology (CEET): <http://rpsec.usca.sc.edu/Workshops/Engines.html>.
- Sagayam, R., Srinivasan, S. and Roshni, S. (2012). A Survey of Text Mining: Retrieval, Extraction and Indexing Techniques. *International Journal of Computational Engineering Research*, 2 (5), 1443-1444.
- Salaam, M. O. and Adegboye, A. M. (2010). *Internet Access and use by Students of Private Universities in Ogun State, Nigeria*. Retrieved September 20, 2016, from <http://www.digitalcommons.unl.edu/libphilprac/331>.
- Sanderson, M. and Croft, B. W. (2012). The History of Information Retrieval Research. *Proceedings of the IEEE*, 100, pp. 1444-1451.
- Sara, S., Jia, T. D., & Ashman, H. (2018). Use of Web Search Engines and Personalization in Information Searching for Educational Purposes. *Information Research*, 23(2).
- Seymor, T., Frantsvog, D. and Kumar, S. (2011). History of Search Engines. *International Journal of Management and Information Systems*, 15 (4), 47-59.
- Shafi, S. and Maqbool, T. (2012). Web Resources Awareness, Use and Retrieval Pattern among Scholars of Two States Universities of Jammu and Kashmir. *International Journal of Information Dissemination and Technology*, 4 (1), 85-91.
- Sharma, M. and Patel, R. (2013). A Survey of Information Retrieval Models, Techniques and Applications. *International Journal of Emerging Technology and Advanced Engineering*, 3 (11), 542-545.
- Shukla, P. and Mishra, R. (2011). Use of e-resources by Research Scholars of Institute of Technology Banaras Hindu University, India. *International Refereed Research Journal*, 2 (2), 184-194.
- Sife, A. S. (2013). *Web Search Behaviour of Postgraduate Students at Sokoine University of Agriculture, Tanzania*. Retrieved August 4, 2016, from <http://www.digitalcommons.unl.edu/libphilprac/897>.

- Sivasubramanian, G., & Gomathi, P. (2019). Awareness and Usage of Search Engines Among the Students Sriramakrishna College of Arts and Science Coimbatore: A Study. *Library Philosophy and Practice*. Retrieved from <https://digitalcommons.unl.edu/libphilprac/2191>.
- Spack, K. and Willet, P. (1997). *Readings in Information Retrieval*. San Francisco: Morgan Kaufman.
- Sunday, J. O., & Ogoegbunam, L. O. (2020). Awareness and Utilization of Search Engines for Information Retrieval by Students of National Open University of Nigeria Enugu Study Centre Library. *Library Philosophy and Practice*. Retrieved from <https://digitalcommons.unl.edu/libphilprac/4650>.
- Tarakeswar, K. and Kavitha, D. (2011). Search Engines: A Study. *Journal of Computer Application (JCA)*, 4 (1), 29-31.
- Wang, L., Wang, J., Wang, M., Li, Y., Liang, Y. and Xu, D. (2012). Using Internet Search Engines to Obtain Medical Information: A Comparative Study. *Journal of Medical Internet Research*, 14 (3).
- Williams, B. and Sawyer, S. (2007). *Using Information Technology: A Practical Introduction to Computers and Communication*. Boston: McGraw Hill.

IMPACT OF DIRECT METHOD OF TEACHING ON NURSERY PUPILS' UNDERSTANDING OF ARABIC LANGUAGE IN KADUNA STATE

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Abstract

The study was conducted to find out whether or not the Direct Method of teaching has impact on the ability of nursery 2 pupils to grasp some rudimental and basic Arabic expressions. Experimental research design was employed to generate the data. The population of the study comprised all the nursery two pupils in private schools in Kaduna State. But being an experimental study, only 40 pupils were randomly selected and divided into experimental and control groups. The direct method of teaching was employed to teach some basic Arabic expressions to the experimental group while the control group was taught using conventional Arabic method of teaching. Test of the same level of difficulty and same content was administered on both groups. The results of the teacher-made test were analyzed using T-test statistical tool. The findings of the study indicated that direct method of teaching has significant impact on nursery two pupils' ability to grasp basic Arabic expressions. Acquainting Arabic teachers of Nursery schools with modern principles of direct method of teaching via school-based workshops is part of the recommendations proffered.

مستخلص البحث

هذه المقالة بعنوان: "أثر الطريقة المباشرة في تعليم تلاميذ الروضة" تهدف إلى الكشف عن أثر الطريقة المباشرة في تعليم الروضة الثانية بالمدارس العربية بولاية كادونا، وقد صمم الباحثان هدفا واحدا للبحث وسؤالا وفرضيته مع استخدام المنهج التجريبي، أعد الاختبار التحصيلي وطبق على عينة البحث الفصدية، وتم توزيعه على مجموعتين (التجريبية والضابطة)، حيث تضم كل منهما اثنين وأربعين (42) طفلا وطفلة يشكلون المجموع الكلي (84) طفلا وطفلة، وبعد جمع البيانات وتحليل السؤال، تبين أن هناك أثرا إيجابيا ذا دلالة واضحة في المجموعة التجريبية على المجموعة الضابطة في تعليم تلاميذ الروضة بالطريقة المباشرة. وعلى ضوء نتائج البحث يوصي الباحثان بضرورة استخدام الطريقة المباشرة في تعليم تلاميذ الروضة، واستعمال الأساليب والأنشطة المتنوعة مع عقد الورشات والإشراف على معلمات الروضة.

المقدمة:

تعد الطريقة المباشرة من الطرق الحديثة في تعليم اللغات الأجنبية، وتسمى أحيانا الطريقة الطبيعية. وقد ظهرت الطريقة عندما تحوّل تعليم اللغة إلى لغة التواصل، حيث أصبح التركيز على المهارة الشفوية، وليس على مجرد قراءة النصوص الأدبية. وتفترض هذه الطريقة أن تعليم اللغة الأجنبية يمكن أن يتم بالأسلوب الذي يكتسب الطفل لغته الأم، لذلك تبنت الطريقة العوامل النفسانية المؤثرة في اكتساب اللغة الأم في تعلم اللغة الأجنبية، فصار اعتمادها على مهارتي الاستماع والكلام أي على لغة مسموعة منطوقة. فكانت اللغة تسعى إلى الاقتتان المباشر بين الكلمة وما تدل عليها، والاستخدام الفعلي للغة، والحوار، واستخدام الوسائل التعليمية بكثافة. وتظهر أهمية هذه الطريقة في مساعدة المتعلم على التواصل مع الناس بشكل طبيعي وسليم، وسهولة

التفكير باللغة الهدف. كما قال د. خرما في الاقتراح على طرق تعليم اللغة الحديثة: "ينبغي أن تكون طريقة تعليم اللغات على أسس نفسية ولغوية، واجتماعية واضحة تستند إليها، وعلى أنها وسيلة التواصل الواقعي في الحياة، ولا يقتصر على لغة الكتب، وبالتالي مع أهداف التعلم وتعليم اللغة الأجنبية في شكلها الحديث. خرما. (1979م، ص: بتصرف).

بناء على ذلك أن الطريقة المباشرة تسعى إلى تزويد متعلميها بالتواصل بأهل اللغة في أقصر وقت ممكن فمنعت الترجمة، لذا تستعين بالوسائل التي تيسر التعليم والتعلم بما في وقت وجيز فاستخدمت الإشارات والصور والحركات والتدريبات والمحاكات إلى التعليم بالطريقة المباشرة.

مفهوم الطريقة المباشرة:

عرفت الطريقة المباشرة بتعريفات كثيرة توردها الباحثة منها مايلي:

هي الطريقة التي تركز على التعليم بالطريقة التي يتعلم الطفل لغته الأصلية، وذلك باختلاف بيئة اللغة وعدم استخدام اللغة الأصلية للطلاب (اللغة الأم) أو أي لغة وسيطة. وتستعين هذه الطريقة بالحركة والصورة وبالوسائل المختلفة للربط بين اللفظ ومعناه الجديد. (علي. د. ت. ص: 5، بتصرف). بالنظر إلى التعريفات السابقة للطريقة المباشرة أنها تحاول أن تنتقل بالمتعلم إلى عالم اللغة المدروسة ليكتسب بعض المهارات الأساسية أثناء تعلمه اللغة الأجنبية كي يكون ملما بما يمكن التصرف فيه تصرفا مباشرا وطبيعا لذا يجرى استخدام الترجمة عند التعليم أو التعلم حيث يتعلم الطالب بطريقة طبيعية كي تكسبه مهارة التفكير والتحدث طبيعيا باللغة المدروسة حتى يفهم اللغة.

نشأة الطريقة المباشرة

أشار اللغويون والتطبيقيون إلى أن نشأة الطريقة المباشرة يرجع إلى:

المدرسة البنوية القائمة على مجموعة من طرائق تعليم اللغات الأجنبية، كالطريقة السمعية الشفوية والطريقة القائمة على المواقف كما بين التاريخ، الطريقة المباشرة التي ظهرت كرد فعل على الطريقة التقليدية عندما تحول تعليم اللغة من لغة الكتب إلى لغة التواصل بين الناس، والذين نادوا بهذه الطريقة في المبادئ وطبقوها في تدريس اللغات في المراحل المبكرة، العالم الفرنسي فرانسوا جوان كما كان منهم و"سوفير" (1826-1907م)، والعالم الألماني "ف. فرانك" (1884-1980م)، والبريطاني "ت برنردفاست" (1806-1887م) ومعلم اللغة اللاتينية (1831-1896م). (العصيلي، 200م، ص: 291 - 299 بتصرف).

يلاحظ أن الطريقة المباشرة وجدت مكانا عن طريق الرجال الذين أسهموا في إنشائها بين العالم وطبقوها بين المدارس عندما عجزت الطريقة التي سبقتها في تزويد المتعلم بالمهارات الأساسية الذي يعتمد عليها التواصل بين الناس لأن تعلم اللغة وتعليمها أنذاك تحول من اللغة المكتوبة إلى اللغة التواصلية بين الناس، ولكن لم يظهر أثرها بعد انتشارها في المدارس الرسمية.

قد استهدفت هذه الطريقة أن يصل المتعلم في أقصر وقت إلى التفكير باللغة الأجنبية دون حاجة إلى الترجمة وإلى اللغة القومية وذلك مباشرة دون وساطة من اللغة القومية. وأكد دعاة هذه الطريقة على ضرورة تحدث المدرس بما منذ أول لحظة في الدرس، والتركيز على تدريب المتعلمين على نطقها واستخدامها، وللتغلب على ضرورة الترجمة إلى اللغة القومية استعان أصحاب هذه الطريقة بالإشارة إلى الأشياء الموجودة في حجرة الدراسة مثل المقاعد والسبورة والأبواب والنوافذ، ثم ينتقل المدرس تدريجيا بالمواقف اللغوية إلى أشياء توجد في المدرسة ثم في البيئة المحلية في خارج المدرسة، واستعان مؤيدو هذه الطريقة أيضا بالحركة والتمثيل والصور والرسوم لتوضيح معاني المفردات، وأيدوا اهتماما خاصا بقدرة التعلم على النطق منذ أول يوم في الدراسة ببعض الجمل والعبارات باللغة الأجنبية. (هندريكو، 2010م، ص: 4-5، بتصرف).

بناء على ماسبق، فإن الطريقة المباشرة ظهرت لارتباطها في طريقة القواعد والترجمة، تحت المقرر البنوي الذي نشأ تجاه جميع الطرائق الحديثة المذكورة، فبدأت المحاولات في تنظيم الطرق التي اعتنى بها الفلاسفة والسيكولوجيون والتطبيقاتيون في إنشاء ما يسمى بالطريقة المباشرة حيث اعتقد أصحابها بأن المتعلم يستطيع أن يتعلم اللغة الثانية (الأجنبية) طبيعياً كما يتعلم الطفل لغته الأم في الأساس، التي تساعد المتعلم التحدث بها طبيعياً.

أهداف الطريقة المباشرة والمزايا والنظرية

تمثل أهداف الطريقة المباشرة فيما يأتي:

- أ) الهدف من متعلم اللغة الثانية وفقاً لهذه الطريقة هو الاتصال بها مع الناس بشكل طبيعي.
 - ب) الحرص على أن تقود متعلم لغة الهدف أن يتحدث بها في أقصر وقت ممكن، دون اللجوء إلى الترجمة من اللغة الأم إليها.
 - ج) الاهتمام الكثير بالجوانب الشفهية من اللغة، وتأخير الجوانب المكتوبة منها. (إبراهيم، 1423هـ، ص: 63، بتصرف).
- الهدف الأساسي من هذه الطريقة هو الاتصال باللغة المدروسة بالشكل الذي يتحدث بها أهل اللغة حيث يتدرج بالمتعلم في بداية تدريسه إلى الأصوات والكلمات المحسوسة الشائعة الاستعمال في محيطه وبيئتها عن طريق المرادفات ثم الجمل المألوفة والعبارات عن طريق التمثيل والصور أو الأفعال أو الحركات حتى يتعود باللغة تعوداً طبيعياً لأنها تعتمد على المراحل التي يتعلم الطفل لغته الأم ليسيطر عليها سيطرة طبيعية.

مزايا الطريقة المباشرة:

تظهر مزايا الطريقة المباشرة وأهميتها فيما يلي:

- أ) تطوير وعي المتعلم بالكلمات الشفوية وإثراء ثروته اللفظية الشفهية، لأن أصل الطريقة تؤكد على الجوانب السمعية الشفهية.
 - ب) تحويل الفصل إلى جو شبيه بالجو العام بيئة اللغة الهدف التي تمكنه من تشكيل الجمل وتركيبها وتقويم روابط المعنى عنده.
 - ج) تحسين هجائه ونطقه للتخلص من عيوب النطق واختيار الكلمات والعبارات والجمل الشائعة وتقديمها بأساليب متدرجة وطبيعية. (إبراهيم، 1423ص: 62-65، بتصرف).
- من ملاحظات الباحث أن الطريقة المباشرة تركز اهتمامها على النطق في البداية ثم إلى الكلمات الشفهية المعهودة ثم إلى الجمل ثم إلى تنظيم الأفكار وأخيراً التفكير وجمع الأفكار والتحدث طبيعياً بدون مشقة، لذا وجهت عنايتها السهلة لا الصعبة فبدأت من السهل إلى الصعب ومن المحسوس إلى المجرد ومن الجزء إلى الكل ومن البسيط إلى المركب.

وظائف كل من المعلم والمتعلم والمواد الدراسية والنظرية التقييمية في الطريقة المباشرة

- 1) وظيفة المعلم في الطريقة هي أنه القائد الموجه لأنشطة الطلاب، والمنفذ للمنهج، وفق الخطوات المرسومة في المنهج والكتاب المقرر، لكن وظيفة المتعلم كما حددت له الطريقة هي الشعور بالراحة والحرية، ومشاركة الأنشطة في حجرة الدراسة، وأما وظيفة المواد الدراسية هي السلطة العليا والسلاح والتدرج الطبيعي الذي يناسب مراحل النمو اللغوي لدى المتعلم في اكتسابه لغته الأم. (العصيلي، 2004ص: 202-203، بتصرف).
- يبدو مما سبق أن الطريقة المباشرة حددت دوراً خاصاً لكل من المعلم والمتعلم وأيضاً المواد الدراسية إلا أن الطريقة لم تسرح للمعلم الحرية الكاملة في تصريف ما يراه مناسباً للمتعلمين بحيث قيد له المنهج الأنشطة التي تجري في الفصل حيث يميل المتعلم إلى ما مال المعلم والمعلم إلى ما مال المقرر والمقرر إلى المنهج الدراسي، مع أن بعض الأشياء لا يقدر المعلم ببيانها عن طريق الإشارات والحركات والصور كالكلمات ذات المعان المجردة مثل: العطش، والجوع، لذلك رأى أصحاب الأمر بتقويم الطريقة المباشرة كما سيأتي البيان عن ذلك.

4) نظرية تقويمية (العيوب) للطريقة المباشرة:

يرى البعض أن العيب الرئيس لهذه الطريقة يرجع إلى الآتي:

(أ) اعتقاد أصحاب هذه الطريقة بأن الأجنبي يستطيع تعلم اللغة الثانية (الأجنبية) بالطريقة التي يكتسب الطفل لغته الأم، وتلك مغالطة صريحة وإغفال للفروق بين المتعلمين في الحالات.

(ب) لاحظ المربون أن هناك فروقا واضحة بين الظروف التي يتعلم فيها الطفل اللغة القومية وبين الظروف التي يتعلم المراهق اللغة الثانية (الأجنبية).
(ج) الإصرار على تجنب الترجمة إصرارا محيضا عنه، قد حددت عدد المفردات التي يستطيع المدرس استخدامها حتى لا يتجاوز ما يستطيع الإشارة إليه أو تمثيها من هذه المفردات، كالكلمات ذات المعاني مثل: القفز، والحب أو الأفعال التي يؤدي تمثيلها إلى أضرار تلحق به (المعلم) أو بتلاميذه مثل: ينتحر ويقفز من الأعلى إلخ.

بناء على ما سبق، فالطريقة المباشرة لها أشياء تؤدي إلى صعوبة في تطبيقها مما لا يأتيها بالنتيجة منها: عدم الاعتبار بالفروق الفردية بين الصغير يتعلم اللغة الأم والكبير وهو يتعلم اللغة الثانية بعد أن سبقت للكبير خلفية والصغير خالي الذهن، وأيضا عدم القدرة على شرح أو تمثيل الكلمات المجردة وكذا قلة الوسائل التعليمية وعدم التوازن بين اللغتين وغير ذلك مما يسبب التراجع عند تطبيق الطريقة فأسرعوا في إدخال بعض التعديلات التي سيأتي بيانها إن شاء الله.

5) التعديلات التي أدخلت على الطريقة المباشرة:

لجأ كثير من مدرسيها إلى إدخال أساليب جديدة عليها، ومن هذه التعديلات:

(أ) استخدام اللغة القومية في تقديم شروح قصيرة لتوضيح معاني الكلم أو العبارات عندما يعجز الطلاب عن فهمها بطريقة الحركات أو الإشارات أو الرسومات.

(ب) عدول المدرس في هذه الطريقة دائما في أسلوبه طبقا لتغير الأهداف ولنوع الدارسين وأيضا طبقا لما يتناسب مع شخصيته للتغلب على بعض المواقف والمشكلات التي تنتج عند تطبيق الطريقة بشكل جامد داخل حجرة الدراسة. (الناقة، 2018م، ص: 65، بتصرف).

من الواضح مما سبق، أن التعديلات التي جاءت بأساليب جديدة في الطريقة المباشرة تؤثر إيجابيا، حيث تساعد المعلم والمتعلم للتغلب على الصعوبات التي تواجه كلاهما (المعلم والمتعلم) عند تطبيق الطريقة المباشرة لتحقيق من الأهداف المرجوة، منها ما يساعد المعلم في التعليم ومنها ما يساعد المتعلم في التعلم، كاستعمال الترجمة والمشاركة في الأنشطة، وللمعلم الحرية في زيادة بعض الأشياء أو النقص حسب ما يراه مناسبا للتعليم، واستخراج القواعد في التراكيب.

معلمة رياض الأطفال ومواصفاتها

ينبغي أن نرى تعريف معلمة الروضة منها مايلي:

يرى حسن، (2002م، ص: 21)، أن معلمة رياض الأطفال: "عبارة عن خبيرة بفنون التدريس وممثلة لقيم المجتمع وثقافته وحريصة على غرس المبادئ والأصول الإسلامية من القرآن الكريم والسنة النبوية المطهرة، وأن تكون خبيرة في العلاقات الإنسانية وقناة اتصال بين دار الحضانة والمنزل وموجهة نفسية ومتعلمة ومعلمة في نفس الوقت".

من البيان السابق، يفهم أن معلمة الرياض هي التي عرفت ما الطفل؟ وما الطفولة؟ وما أهمية هذه المرحلة؟ ولا تستطيع أن تكون معلمة الأطفال حتى تصير بنفسها كالطفل تارة تعلمهم وتتعلم منهم لتقوم بدورها كما ينبغي، لذا ينبغي أن تكون لينة مع الأطفال بأسلوبها ومتدينة وخبيرة متميزة بمرحلة الطفولة لتؤثر فيهم ويتأثروا بها، لذا اعتقد البعض أنه ليس كل إنسان يستطيع أن يكون معلم الروضة.

ثانيا: صفات معلمة رياض الأطفال

هناك صفات ينبغي على معلمة الروضة أن تتحلى بها وهي كالآتي:

أ) "أن تكون شريفة بديهة وتحسن التصرف في الحالات الطارئة.
ب) أن تكون مطلعة على كل جديد في عالم الطفل بالقراءة وحضور الدورات، وأن تتقبل كل فرد من الأطفال كاملا بغض النظر عن شكل جسمه ومظهره.

ج) أن تكون قادرة على فهم ما يفكر به الطفل، أي أن ترى الأمور من زوايته وليس منها

د) وتتعامل مع كل طفل على أن له قدرات وميولا خاصة له وحده تحاول أن تنميتها.

هـ) أن تكون جملها سليمة وكلماتها واضحة عند الحديث مع الأطفال وتستخدم مفردات صحيحة.

و) أن تهتم بنظافتها الشخصية وأن يكون لديها استعداد الحركة واللعب والتفاعل.

(النصوص المنشورة، 2018م، الساعة: 09:5)

لاحظ الباحثان أن معلمة الروضة قد فاق شأنا جميع شؤون المعلمين في بقية مراحل التعليم لأنها لا بد أن تكون مزودة بكل ما يؤهل الطفل في بنائه لهذه المرحلة لأنها هي مرآته بل ككل شيء لذا تجعل الطفل أمامها وأن تكون هناك علاقة ودية بينها وبين الأسرة لمعرفة ما يجري وأن تجعل الطفل محورها الأول.

عمال الترجمة والمشاركة في الأنشطة، وللمعلم الحرية في زيادة بعض الأشياء أو النقص حسب ما يراه مناسباً للتعليم، واستخراج القواعد في التراكيب.

وخلال زيارة الباحثان لرياض الأطفال العربية وكذلك في مقابلة أجراها الباحثان مع معلمات رياض الأطفال العربية، لاحظنا أن هناك صعوبات مشتركة لدى الأطفال ومن أهمها: التداخل في نطق بعض الأصوات، مثل: - ح - خ، - أ - ع، ك - ق، ض - د، س - ص - ث، وقلة المحصول اللغوي عند الأطفال وصعوبة التواصل باللغة العربية، في استعمال تراكيب اللغة الأولى في اللغة الهدف، وسوء اختيار موضوع التعبير وبعدها في الأغلب عن ميول الأطفال وانصرافهم عن المحادثة لأسباب نفسية مثل: الخجل وغيرها.

وبناء على ذلك، لاحظ الباحثان صعوبات تواجه متعلمي اللغة العربية كلغة ثانية أو لغة أجنبية لأنها ليست لغتهم الأصلية، وخاصة في نطق بعض الأصوات، على ذلك تسعى الباحثة إلى استثمار الطريقة المباشرة في تعليم تلاميذ الروضة بحيث أنها تعتمد على عناصر أساسية في بداية تعلم النطق والحديث الذي يقدم القراءة والكتابة عليهما، لعل ذلك يساهم في تطوير العملية التعليمية في مجال تعليم اللغة العربية لذا تسعى المقالة إلى الإجابة عن السؤال ما أثر الطريقة المباشرة في تعليم تلاميذ الروضة الثانية بالمدارس العربية في ولاية كدونا؟ والوقوف على مدى أثر الطريقة المباشرة في تعليم تلاميذ الروضة الثانية بالمدارس العربية في ولاية كدونا.

منهج البحث ومجتمعه وعينته وأسلوب اختيارها

خلال الاطلاع للبحوث والدراسات السابقة وخاصة الجوانب التربوية للوقوف على المنهج المستخدم، اعتمد الباحثان على المنهج التجريبي وذلك لكونه أكثر ملاءمة لطبيعة هذا البحث للوصول إلى النتائج المرجوة باستخدام المجموعتين المتكافئتين: المجموعة التجريبية التي تلقت تدريبات خاصة وفق الطريقة المباشرة، والمجموعة الضابطة التي درست بالطريقة العادية. وتكون مجتمع البحث من جميع تلاميذ الروضة الثانية بالمدارس العربية في ولاية كدونا للعام (2020م-2021م)، البالغ عددهم (996) تلميذا وتلميذة، الذي تراوح أعمارهم ما بين (3-6) سنة، للعين (84) تلميذا وتلميذة وتم اختيارها بطريقة عشوائية من مجتمع البحث ليكون المجموعة التجريبية والمجموعة الضابطة للبحث وذلك في ثلاث مدارس رياض الأطفال العربية، وهي مدرسة أنصار السنة للتصفية والتربية ماغمي زاريا، البالغ عددهم اثنين وأربعين (42) تلميذا وتلميذة، وكلية الشيخ أبي بكر غومي كدونا، البالغ عددهم وجد وعشرين (21) تلميذا وتلميذة، وكلية اللغة العربية والدراسات الإسلامية (بُزُنْ عَوَارِي) كدونا، البالغ عددهم (21) تلميذ وتلميذة. تضمنت المجموعة التجريبية (42) تلميذ وتلميذة، كما اشتملت المجموعة الضابطة (42) تلميذ وتلميذة كما سيوضح ذلك الجدول التالي:

الجدول رقم (1)

جدول توزيع أفراد العينة تبعاً للمجموعة الضابطة والتجريبية

النسبة المئوية	مجموع العينة التجريبية والضابطة	نوع العينة	عينة البحث
50%	42	المجموعة التجريبية	مدرسة أنصار السنة للتصفيية التربية ماغمي زاريا.
25%	21	المجموعة الضابطة	كلية الشيخ أبو بكر غومي كدونا.
25%	21	المجموعة الضابطة	كلية اللغة العربية والدراسات الإسلامية (برزنج غواري).
100%	84		المجموع الكلي

يوضح الجدول أعلاه توزيع مجموعة التجريبية والضابطة لكل من مدرسة أنصار السنة للتصفيية والتربية ماغمي زاريا، البالغ عددهم اثنين وأربعين (42) تلميذا وتلميذة للمجموعة التجريبية، وكلية الشيخ أبو بكر غومي كدونا، البالغ عددهم واحد وعشرون (21) تلميذا وتلميذة، وكلية اللغة العربية والدراسات الإسلامية برزنج غواري، البالغ عددهم واحدا وعشرين (21) تلميذا وتلميذة.

أداة البحث:

استخدم الباحثان طريقة الصور المتكافئة للاختبار في أثر الطريقة المباشرة في تعليم الروضة الثانية في ولاية كدونا كأداة من أدوات البحث وينقسم

الاختبار إلى الآتي :

- 1) مقدمة الاختبار: اتضحت فيها الغرض من الاختبار والمعلومات عنه.
- 2) إرشادات الاختبار: هي عبارة عن العناوين الأساسية التي تعرض المشكلة المطلوبة للإجابة عنها.
- 3) تدريبات تتعلق بالطريقة المباشرة عن طريق التدريب والمحاكات والتمثيل والإشارات واستعمال الصور للأصوات التي يسمعها وينطقها التلاميذ مباشرة.

صدق الأداة وثباتها وتجريبها

للاستئذان قام الباحثان بعرض الاختبار على المحكمين وذلك للتأكد من صدقها، وللتأكد من ثبات وصدقها قاما الباحثان بتجريب الأداة على العينة الاستطلاعية لثباتها على إعطاء النتائج نفسها باستمرار إذا ما تكرر تطبيق المقياس على نفس المجموعة التي أجري عليها البحث وتحت نفس الظروف والأحوال، والهدف من التجربة لقياس ما وضع له، وليتصف بالواقعية والتعرف على المدة الزمنية التي سوف يستغرقها تلاميذ في الإجابة عن الأسئلة ومعرفة العوائق والصعوبات التي قد تحدث عند تطبيق الاختبار بصورة نهائية.

أسلوب تحليل البيانات:

- اختبار (ت) للفرق بين متوسطي عينتين مستقلتين.

النتيجة والمناقشة

قام الباحثان بتحقيق هدف البحث عن طريق تطبيق الأداة على أفراد العينة الفعلية من تلاميذ الروضة الثانية بالمدارس العربية في ولاية كدونا، واستعملا في ذلك وسيلتين: الأولى؛ التطبيق القبلي، والثانية: التطبيق البعدي على طلاب المجموعة التجريبية البالغ عددها (42) تلميذ وتلميذة، والضابطة، البالغ عددها (42) تلميذ وتلميذة، وبعد جمع البيانات، وتم تصفيتها. استخدم اختبار (ت) للحساب في معالجة البيانات والحصول على نتيجتها، وذلك كما يلي:

تم عرض سؤال البحث واختباره بالأسلوب الإحصائي الملائم، اختبار (ت) على كل من المجموعتين: التجريبية، والضابطة وذلك في أداء التلاميذ.

الجدول رقم (2) : تقسيم الطلبة من حيث المجموعات

المجموعات	عدد أفراد المجموعة	النسبة المئوية
المجمعة التجريبية	42	%50
المجموعة الضابطة	42	%50
المجموع الكلي	84	%100

يبين من هذا الجدول أن الباحثين اختاروا أربع وثمانين تلميذ وتلميذة بهدف التجريب، وتطبيق الأداة عليهم في هذا البحث، حيث تم تقسيمهم إلى فئتين متكافئتين، وهما: المجموعة التجريبية والمجموعة الضابطة، فالمجموعة التجريبية: هي التي تلقت دروسها عن طريق استخدام الطريقة المباشرة، وعدد أفرادها (42) تلميذ وتلميذة، وتلقت المجموعة الضابطة دروسها استخدام الطريقة العادية، وعدد أفرادها (42) تلميذ وتلميذة، بهدف تجريب وتطبيق السؤال عن:

ما أثر استخدام الطريقة المباشرة في تعليم تلاميذ روضة الثانية بمدارس العربية في ولاية كدونا ؟

للإجابة عن هذا السؤال، استخدم الباحثان الإحصاء الوصفي للتعرف على أثر الطريقة المباشرة في تعليم الروضة الثانية بالمدارس العربية في ولاية

كدونا، وذلك كما يظهر من الجدول التالي:

الجدول رقم (3)

المجموعة	العدد	المتوسط الحسابي	الانحراف المعياري	الخطأ المعياري	الفرق	التعليق
المجموعة التجريبية	42	57.12	6.71	1.04	26.7	تفوقت المجموعة التجريبية على المجموعة الضابطة
المجموعة الضابطة	42	30.55	7.05	1.09	26.7	

يبين من الجدول رقم (4.1) أن هناك فروقا ذا دلالة إحصائية في تحصيل التلاميذ بين المجموعة التجريبية التي تعلمت بالطريقة المباشرة والمجموعة الضابطة التي تعلمت بالطريقة العادية في تنمية مهاراتي الاستماع والكلام، كما أن المتوسط الحسابي لأداء المجموعة التجريبية في الاختبار البعدي لمهاراتي الاستماع والكلام بلغ (57.12) درجة، بانحراف معياري (6.71) درجة، بينما بلغ المتوسط الحسابي لأداء المجموعة الضابطة في الاختبار القبلي (30.55) درجة، بالانحراف معياري (7.05) درجة، مما يدل على أن التلاميذ في المجموعة التجريبية حصلوا على المتوسط الحسابي المرتفع، ويمكن تفسير هذه النتيجة على أن المجموعة التي تلقت تدريبات خاصة بالطريقة المباشرة قد استفادت كثيرا من الطريقة المباشرة، كما لاحظها الباحثان أثر ذلك لدى هؤلاء التلاميذ.

الخاتمة

هدفت هذه المقالة إلى التعرف على أثر الطريقة المباشرة في تعليم الروضة الثانية بالمدارس العربية في ولاية كدونا، وتم الكشف عن مفهوم الطريقة المباشرة ونشأتها وأهدافها ومزاياها وعيوبها والنظرية التقويمية والتعدديات التي أدخلت فيها، وتم بيان معنى الروضة وصفات معلمة الروضة التي تمثل جزءاً مهماً

من عملية التعليم. ولتحقيق هدف البحث، صاغ الباحثان سؤالاً واحداً للإجابة عنه في آخر المطاف، واستخدما تلاميذ الروضة الثانية بالمدارس العربية في ولاية كدونا كمجتمع البحث، واتخذوا المنهج التجريبي الذي يعتمد على تقسيم العينة إلى فئتين متكافئتين وهما: المجموعة التجريبية البالغ عددها (42) تلميذ وتلميذة والضابطة البالغ عددها (42) تلميذ وتلميذة وتم اختيارها بشكل قصدي لتحديد أفراد المجتمع، كل هذا بهدف قياس أثر الطريقة المباشرة في تعليم الروضة الثانية بالمدارس العربية في ولاية كدونا، للتعويض التي يواجهها متعلمي اللغة العربية كلغة ثانية أو لغة أجنبية عند النطق . وقد توصل الباحثان إلى النتيجة الآتية:

وجود فروق ذات دلالة إحصائية بين التلاميذ الذين تلقوا تدريباتهم باستخدام الطريقة المباشرة بشكل إيجابي على الذين تلقوا بالطريقة العادية في تعليم تلاميذ الروضة الثانية بالمدارس العربية بولاية كدونا. ويتبين ذلك من خلال المتوسط الحسابي الذي يتراوح بين 57.12 و 30.55 بعد التجربة حول استخدام معلمة الروضة لطريقة المباشرة في تعليم التلاميذ. وهذا يؤكد مدى الأثر الإيجابي للطريقة المباشرة في تعليم الروضة الثانية بالمدارس العربية في ولاية كدونا.

المراجع

- حسان، حسن. (2002م). *طفل ما قبل المدرسة الابتدائية، دراسات وبحوث تربوية، مكتبة الطالب الجامعي: القاهرة: مكة المكرمة*
- العصيلي، عبد العزيز إبراهيم. (2004م). *أساسيات تعليم اللغة العربية للناطقين بلغات أخرى، جامعة الإمام بن سعود الإسلامية معهد تعليم اللغة العربية: الرياض. الطبعة الأولى.*
- عبد العزيز، إبراهيم. (1423م). *طرائق تدريس اللغة العربية للناطقين بلغات أخرى، جامعة إمام ابن سعود الإسلامي، مكة المكرمة*
- محمود كامل. (2018م). *المراجع المعاصر في تعليم اللغة العربية للناطقين بغيرها الأسس والمداخل واستراتيجيات التدريس، دار الفكر العربي الطبعة الأولى.*
- نيف، خرما. وغيره. (1978م). *اللغات الأجنبية تعليمها وتعلمها، عطر المعرفة: كويت.*
- طوماس، هندريكو. (2010م) *أثر الطريقة المباشرة في اكتساب المفردات. دراسة مقدمة إلى قسم اللغة العربية والتربية جامعة باتونسنكار الإسلامية الحكومية نيجير.*
- النصوص المنشورة. (2018م).

