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A STUDY OF SOCIAL NETWORKING AMONG TERTIARY INSTITUTION STUDENTS: CASE STUDY OF ADEYEMI COLLEGE OF EDUCATION, ONDO, ONDO STATE, NIGERIA.

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Abstract
The study investigated social networking among tertiary institution students in Adeyemi College of Education, Ondo. The population of the study consisted of all students in Adeyemi College of Education, Ondo and the sample comprised two hundred (200) respondents which were randomly selected from the five schools in the College. A survey research design was adopted for the study. Five research questions were raised to guide the study. A research instrument titled "Social Networking among Tertiary Institution Students Questionnaire" (SNTISQ) was used to elicit information from the respondents. Data collected were analysed using frequency counts and simple percentages. Findings revealed that there is prevalence of social networking among tertiary institution students and facebook is the most commonly used. It was also found that social networking helps in getting easy access to information across the world and materials for school assignment and works. On the other hand, cyber bullying, cyber fraud, sex chatting, pornography and isolation are the negative effects of social networking media on students. It is therefore recommended that there should be collaborative effort among the government, school authority and parents on how to encourage positive use of social networking. Guidance counsellors should also work on enlightening students about social networking and providing the therapeutic interventions for those negatively affected.

Introduction

The increased use of social networking has become a global phenomenon in recent years. What started as a hobby for some computer literate people has become a social norm and way of life for people around the globe (Boyd & Ellison, 2007). Teenagers and youths especially students have embraced these sites as a way to connect with their friends and make new friends, share information and photographs of their activities such as birthday photographs with friends. These showcase their social lives.

Social networks are the main application under the umbrella of social media and the internet which comes under the Web 2.0 era. It is the fastest growing web application in the 21st century. The wide nature of application like video streaming, video calls, instant messages, blogging, pictures and video sharing makes it the phenomenon of the century.

The age distribution of social networks users (mainly Facebook) is concentrated on the younger categories where 300 million users are between age 18 – 24 years old and 120 million users are between the age range of 13 – 17 years old. Many users use social networks mainly through their mobiles with less users browsing through their computer. Those users have integrated the sites into their daily practices (Junco, 2012).

Some students have become very smart because of information they got from these sites. Some are so connected that they have friends in different countries while some have become very poor academically because they have neglected their studies. Social networking sites expose users to different cultures, lifestyles and traditions which sometimes

have contradictory effects on them. The use of free access to pornography, sex chatting, cyber crime, cyber bullying, hacking and impersonations are the major negative influence from the use of social networking sites.

Statement of the Problem

Social networking generally is a fluke that is eating deeply into students' daily life and it has been become a regular pattern which they cannot dissociate themselves from. They spent much of their time on it than reading and studying for good grades. In fact, social networking is now regarded as a hobby for students which have made them to become addicted. It is supposed to improve the social acquaintances of students. In practice however, time spent on social and academic lives tend to be competing for attention from students. This may likely lead to bad habit or declining academic performance in school. This study aimed at investigating social networking among tertiary institution students as it affect academic performance of students; hence the study.

Purpose of the Study

The study investigated social networking among tertiary institution students. Specifically, the study was designed to:

a. examine the prevalence of social networking among tertiary institution students
b. identify the commonly used social networking websites among tertiary institution students.
c. Investigate the positive influence of social networking on students' academic activities.
d. ascertain the negative influence of social networking on students' academic and social activities.
e. investigate the difference between male and female students in the use of social networking sites.

Research Questions

1. What is the prevalence of social networking among tertiary institution students?
2. What are the commonly used social networking websites among tertiary institution students?
3. What is the positive influence of social networking on students' academic activities?
4. What is the negative influence of social networking on students' academic and social activities?
5. Is there any difference between male and female students on the use of social networking sites?

Methodology

Survey research design was adopted for this study. The population comprised all Adeyemi College of Education students in Ondo. Forty (40) students were randomly selected from each of the five schools in the College, making a total of two hundred (200) respondents as the sample. Structured questionnaire constructed by the researchers was used to collect data for the study. The questionnaire was divided into two parts (Section A and B). Section A deals with the demographic characteristics of the respondents while Section B consists of 20-items that are related to the objectives of the study. Data collected were

analysed using frequency counts and simple percentages.

Results

Research Question 1: What is the prevalence of social networking among tertiary institution students?

Table 1: Prevalence of Social Networking

S/N	Items	SA	%	A	%	D	%	SD	%
1.	I use social networking media everyday.	36	46	76	38	21	10.5	11	5.5
2.	I purchased my mobile phone or computer purposely because of social media network.	36	18	47	23.5	63	31.5	27	45
3.	Epileptic power supply affects my use of social networks more than studying and learning.	48	24	57	28.5	55	27.5	40	20
4.	My course mates and school friends are all on social networking sites.	73	36.5	82	41	21	10.5	24	112

From Table 1, item 1 shows that 92 (46%) of the respondents strongly agreed that they used social networking media everyday; 76 (38%) of the respondents agreed that they used social networking media everyday; 11 (5.5%) strongly disagreed that they use social networking media everyday while 21 (10.5%) of the respondents disagreed that they use social networking media everyday. Item 2 shows that 36 (18%) of the respondents strongly agreed that they purchased their mobile phone or computer purposely because of social media networks, 47 (23.5%) of the respondents agreed while 45 (27%) of the respondents strongly disagreed and 63 (31.5%) of the respondents disagreed.

Item 3 shows that 48 (24%) of the respondents strongly agreed that epileptic power supply affected their use of social networks more than studying and learning, 57 (28.5%) of the respondents agreed while 40 (20%) of the respondents strongly disagreed and 55 (27.5%) of the respondents disagreed that epileptic power supply affects their use of social networks more than studying and learning.

Item 4 shows that 73 (36.5%) of the respondents strongly agreed that their course mates and school friends are all on social networking site; 82 (41%) of the respondents agreed while 24 (12%) of the respondents strongly disagreed and 21 (10.5%) of the respondents disagreed that their course mates and school friends are all on social networking site.

Research Question 2: What are the commonly used social networking websites among students?

Table 2: Commonly used Social Networking Websites

S/N	Items	SA	%	A	%	D	%	SD	%
1.	Facebook is the most commonly used social networking site.	122	61	63	31.5	11	5.5	04	02

S/N	Items	SA	%	A	%	D	%	SD	%
2.	Instagram increase any social profile and reputation among my friends.	53	26.5	64	32	48	24	35	17.5
3.	Twitter keeps me in touch with my role models and professionals in my field of study.	31	15.5	55	27.5	67	33.5	47	23.5
4.	I promote my research and academic progress through linkedin.com	21	10.5	34	17	69	34.5	76	38
5.	I got in touch with my friends and	98	49	87	43.5	09	4	.	5
06	03								

From Table 2, item 1 shows that 122 (61%) of the respondents strongly agreed that Facebook was the most commonly used social networking site, 63 (31.5%) of the respondents agreed while 4 (2%) of the respondents strongly disagreed but 11 (5.5%) of the respondents disagreed that Facebook is the most commonly used social networking site.

Item 2 shows that 53 (26.5%) of the respondents strongly agreed that instagram increase their social profile and reputation among their friends, 64 (32%) of the respondents agreed while 35 (17.5%) of the respondents strongly disagreed and 48 (24%) of the respondents disagreed that instagram increased their social profile and reputation among their friends.

Item 3 shows that 55 (27.5%) of the respondents strongly agreed that Twitter keeps them in touch with their role models and professionals in their field of study; 67 (33.5%) of the respondents agreed while 31 (15.5%) of the respondents strongly disagreed and 47 (23.5%) of the respondents disagreed that twitter kept them in touch with their role models and professionals in their field of study.

Item 4 shows that 21 (10.5%) of the respondents strongly agreed that they promote their research and academic progress through Linkedin.com, 34 (17%) of the respondents agreed while 76 (38%) of the respondents strongly disagreed and 69 (34.5%) of the respondents disagreed that they promote their research and academic progress through linkedin.com.

Item 5 shows that 98 (49%) of the respondents strongly agreed that they got in touch with their friends and family members through WhatsApp, 87 (43.5%) of the respondents agreed while 6 (3%) of the respondents strongly disagreed and 9 (4.5%) of the respondents disagreed they got in touch with their friends and family members through WhatsApp.

Research Question 3: What is the positive influence of social networking on students' academic activities?

Table 3: Positive Influence of Social Networking

S/N	Items	SA	%	A	%	D	%	SD	%
1.	I use social networks to get information for my school assignments and works.	56	28	60	30	43	21.5	41	20.5
2.	I can easily access the world from my location through social networks.	101	50.5	88	44	06	0	05	2.5
3.	I can access my role models, clerics update and information through	65	32.5	53	26.5	52	26	30	15

From Table 3, item 1 shows that 56 (28%) of the respondents strongly agreed that they use social networks to get information for school assignments and works, 60 (30%) of the respondents agreed while 41 (20.5%) of the respondents strongly disagreed but 43 (21.5%) of the respondents disagreed that they used social networks to get materials for school assignments and works.

Item 2 shows that 101 (50.5%) of the respondents strongly agreed that they easily access the sites from their location through social networks, 88 (44%) of the respondents agreed while 5 (2.5%) of the respondents strongly disagreed and 6 (3%) of the respondents disagreed that they easily access the world from their location through social networks.

Item 3 shows that 65 (32.5%) of the respondents strongly agreed that they can access their role models, clerics updates and information through social networks, 53 (26.5%) of the respondents agreed while 30 (15%) of the respondents strongly disagreed and 52 (26%) of the respondents disagreed that they can access their role models, clerics updates and information through social networks.

Research Question 4: What is the negative influence of social networking on students' academic and social activities?

Table 4: Negative Influence of Social Networking

S/N	Items	SA	%	A	%	D	%	SD	%
1.	I am a victim of cyber bullying and fraud	53	26.5	62	31	49	24.5	49	18
2.	I spend more on money social media credits than buying academic materials for learning and studying.	58	29	54	27	46	2	46	21
3.	Pornography, sexting chatting and other explicit contents are free to access through social networking.	112	56	77	38.5	04	0	04	3.5
4.	Social networking media distracts my attention during studying for examination.	71	39.5	84	42	21	10.5	21	08
5.	I have a strong emotional attraction to social network usage that it affects my physiological and psychological well being.	61	30.5	68	34	47	23.5	47	12
6.	Social media isolates me and reduces	54	27	61	30.5	47	2	3	. 5

From Table 4, item 1 shows that 53 (26.5%) of the respondents strongly agreed that they were a victim of cyber bullying and fraud, 62 (31%) of the respondents agreed while 36 (18%) of the respondents strongly disagreed and 49 (24.5%) of the respondents disagreed that they are a victim of cyber bullying and fraud.

Item 2 shows that 58 (29%) of the respondents strongly agreed that they spend more on social media credits than buying academic materials for learning and studying, 54 (27%) of the respondents agreed while 42 (21%) of the respondents strongly disagreed and 46 (23%) of the respondents disagreed that they spend more on social media credits than buying academic materials for learning and studying.

Item 3 shows that 112 (56%) of the respondents strongly agreed that pornography, sex chatting and other explicit contents were free to access through social networking, 77 (38.5%) of the respondents agreed while 7 (3.5%) of the respondents strongly disagreed and 4 (2%) of the respondents disagreed that pornography, sex chatting and other explicit contents are free to access through social networking.

Item 4 shows that 79 (39.5%) of the respondents strongly agreed that social networking media distract their attention during studying for examination, 84 (42%) of the respondents agreed while 16 (8%) of the respondents strongly disagreed and 21 (10.5%) of the respondents disagreed that social networking media distract their attention during studying for examination.

Item 5 shows that 61 (30.5%) of the respondents strongly agreed that they have a strong emotional attraction to social network usage that it affects their physiological and psychological well being, 68 (34%) of the respondents agreed while 24 (12%) of the respondents strongly disagreed and 47 (23.5%) of the respondents disagreed they have a strong emotional attraction to social network usage that it affects their physiological and psychological well being.

Item 6 shows that 54 (27%) of the respondents strongly agreed that social media isolates them and reduces their social interaction with outside world, 61 (30.5%) of the respondents agreed while 38 (19%) of the respondents strongly disagreed and 47 (23.5%) of the respondents disagreed that social media isolated them and reduced their social interaction with outside world.

Research Question 5: Is there any difference between male and female students in social networking?

Table 5: Difference between Male and Female Students in Social Networking

S/N	Items	SA	%	A	%	D	%	SD	%
1.	Female social media users have more online friends than their male counterpart.	109	54.5	72	36	06	05	12	6.5
2.	I developed a strong courtship relationship through social media network.	19	9.5	39	19.5	67	33.5	75	37.5

From Table 5, item 1 shows that 109 (54.5%) of the respondents strongly agreed that female social media users have more online friends than their male counterpart, 72 (36%) of the respondents agreed while 13 (6.5%) of the respondents strongly disagreed and 6 (3%) of the respondents disagreed that female social media users have many online friends than their male counterpart.

Item 2 shows that 19 (9.5%) of the respondents strongly agreed that they developed a strong courtship relationships through social media network, 39 (19.5%) of the respondents agreed while 75 (37.5%) of the respondents strongly disagreed and 67 (33.5%) of the respondents disagreed that they developed a strong courtship relationships through social media network.

Discussion of Findings

This study showed that social networking is prevalent among students and this finding is supported by Boyd (2007), who confirmed that teenagers and youth especially students have embraced websites as a way to connect with their friends and make new ones, share information, photos of their activities such as birthday, photo with friends in class etc. and show case there social lives. It is also supported by Junco (2012), who asserted that students have integrated social networking media into their daily practices, some individuals even claim that chatting and internet surfing is their hobby.

It was also revealed that facebook.com is the most commonly used social networking websites among students and this finding is in line with research website, the country.com (2014), who stated that Facebook users topped all social networking sites with over 955 million users in 2013.

The findings of the study showed the positive influence of Social Network Site (SNS) as easy access to information across the world, and getting materials for school assignment and works. This assertion is in line with Asad and Abdullah-al-Mamum (2012), who stated that students can exchange, get assignments resources and information from across the world.

The study showed that cyber bullying, cyber fraud, sex chatting, pornography and isolation are the negative effects of social networking media on students and this finding is supported by a research website schooliseasy.com (2014) which stated that students experience cyber bullying where students write and post hurtful and abusive message targeting other students. This finding was also supported by Junco (2012) who stated that there is negative relationship between academic grades (GPA) and time spent on social network media. Burak (2012) asserted that academic grades will be influenced badly by multicasting in classroom. Turig, Mehboob, Khan and Ullah (2012) confirmed negative relationship between social networking and health status of students.

Conclusion

It was revealed that female students have more online friends than their male counterparts. Female students' physical appearance may to attract other social media users especially male asking them to be their friends. Female students spent more time on social sites than males. This may explain why females student tend to have more online friends than their male counterparts.

Recommendations

Based on the findings, the following recommendations were made:

- Government, parents, teachers, school authorities and society should strategise on how to make social networking productive, educative, informative, fun making and integrating.
- Parents and guardians should keep an eye on how the mood of their wards/children changes following online activity. Are they more moody or quiet, for

example? This might point to the possibility that they have experienced bullying or something else might have rattled them. Parents should explore the internet together with their children, as this will give first-hand knowledge of what they are getting up to.

- There should be a restriction on the amount of time children spend online particularly on a school night in order to avoid poor academic performance.
- Adolescent should be enlightened that not everyone online is who he/she claims to be.
- Psychological and physiological effects of social networking such as addiction, poor grammar usage, and lack of productivity, reduction in real human contact, isolation and effect on health are signals of the need for proper social media orientation and education as it would enable them to have foremost knowledge on the effect of the excessive use of social networking media.
- Government, through its curriculum agencies, can integrate social networking media into school curriculum and extra curricular activities for effective classroom learning and teaching processes and as a source of research assignment and group project for students which can help to develop their critical thinking.
- School should use social networking media to promote students' academic competences, achievement, research works and innovations, psychomotor and sporting abilities, vocational skills so as to increase their career prospect and employment opportunity.

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ABUSE OF POLITICAL PROCESSES AMONG ELITES IN NIGERIA

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Abstract

The study investigated abuse of democratic processes to political participation by the elite in Nigeria. Five research questions were used to guide the study. The study adopted a descriptive survey research design with a sample of 150 respondents selected through simple random sampling techniques. A structured type of questionnaire was used as the instrument which had two (2) sections. Data collected through the research instruments were analyzed using frequency and simple percentages. The result of the findings revealed that democracy improves the quality of decision-making and provides a method to deal with differences and conflicts among others. It was concluded that political elites have been abusing democratic governance in Nigeria and they have equally been influencing the level of political participation. Based on the findings and conclusion of the study, it was recommended that good and responsible representation must be encouraged from the grassroots, representatives politically elected must be held accountable by the people, and better public participation be encouraged to carry the people along.

Keywords: Political process, Elites, Political participation, Political abuse, Democracy.

Introduction

Democracy is a form of government in which anybody who is willing and interested is given the opportunity to participate in authoritative decision-making. It is a form of government that recognizes individual rights and is built on the principles of one man, one vote, and one vote, one value. Democracy is a deal between the rulers and the people. The legitimacy of the government that is, its claim of obedience to its laws, as well as doing what the public want, make up this deal. The structure that governs this legitimacy bargain in a competitive political election is the second part. The goal of the agreement is to ensure that people are involved in policymaking (Oladapo, Oyewale, & Abayomi, 2020). The core meaning of democracy is participation.

Democracy and political engagement are two intertwined notions; neither can survive without the other. The people must be fully involved in the process of constructing a democratic regime. Citizens must participate in some way, whether directly or indirectly. The term "participation" refers to the various ways in which members of the public express their views and, in theory, exert influence over political, economic, management, and other social issues. A radical transparency, though not adequate, is required for well-informed involvement. People who are most affected by a choice should have the most input, while those who are less affected should have less (Osondu, 2008). From an administrative standpoint, participation aims to motivate people and develop public support for actions. It allows the exchange of important information about local situations for citizens. It allows individuals and groups to have a representative voice in agency decisions, among other things. Political participation is defined as any activity aimed at influencing government policy. It's the part of democracy concerned with the political environment.

Davies (1963), cited in Osondu (2008), described political involvement as

"participating in the fundamental decision as to what are the common aims of one's society and the best strategies to achieve these goals." As an integrated member of a society, political engagement expresses behaviors, reactions, interactions, and role expectations. It is common knowledge that the democratic process fails to achieve its objectives without sufficient citizen participation. Political participation, according to Ogunna (2003), can be active, partial, or inactive. Political elites maintain ongoing control over the masses' power resources. The state, the civil organization of political power, is ruled by the elites. Even if they have conflicts with the masses, which can influence political decisions from the "top down" to the "bottom up" (Easterly, 2008), the elites' possession of multiple forms of capital (social, cultural, economic, political, and so on) allows them to ensure their social and cultural reproduction.

Citizens' involvement in the political system is known as political participation. Political participation, as defined by Eakin and Adelekan (2010), is the process by which an individual participates in the political life of his society and has the opportunity to decide what the society's common goals are and the best means to achieve them. Citizens' involvement in the political system is known as political participation. Political participation, as defined by Eakin and Adelekan (2010), is the process by which an individual participates in the political life of his society and has the opportunity to decide what the society's common goals are and the best means to achieve them. Political participation, according to Akamare (2003), as cited in Henry (2011), is a component of political behavior that focuses on how individuals participate in politics. It is a voluntary activity in which everyone can directly or indirectly engage. People can participate in the political system in a variety of ways, including the selection or election of political leaders, policy formation, community activities, and other civic engagements.

The essence of political engagement in any society, civilized or primitive, according to Arowolo and Aluko (2010), is to seek control of authority, acquisition of power, and influence decision-making. Political engagement is a way of contributing one's fair share to the country's political system and general development. One of the most basic elements of democratic administration is political involvement. This is why Adelekan (2010) underlined that democracy, in its ideal form, entails individual engagement in decisions that affect one's life. In a democratic government, citizens must be fully engaged in democratic methods for selecting rulers and communicating public policies and attitudes. Any claim to be a democratic system or state must include a high level of competitive choice, openness, and enjoyment of civic and political liberties, as well as political engagement by all citizens (Arowolo & Aluko, 2010).

Furthermore, it demonstrates that citizen participation results in a variety of inventions. However, because these good impacts are only felt by individuals who participate, and the number of participants is frequently limited, the benefits to individual democratic citizenship are more conclusive than the benefits to democracy as a whole (Ajayi 2002). Citizen engagement is often regarded as an important component of democratic citizenship decision-making. No matter which sort of citizen engagement is investigated concerning the process and the outcome, it leads to democratic development of knowledge, skills, and virtues, whereas those who do not participate are less supportive. It is necessary to distinguish between forms of outcome and decision making from process and opinion formation in order to comprehend the contribution of various kinds of citizen participation to democracy. Citizens who participate in referendums and participatory policymaking have a greater influence on policy than those who participate in deliberative surveys and forums.

There is also a sense of tension. Deliberative forums and surveys are better at encouraging debate, whereas referendums and participatory policy-making projects are better at involving citizens. The number of people who become active is a small percentage of the population, and certain groups are frequently under represented.

The expansion of western education heralded the rise of the elite, who would eventually wield power over the illiterate masses. "Education was the progenitor of self-government," Macaulay said. This is appropriate since this class or group of people develops national and international policies that help to advance national development. The elite class directs other sections of society through decision-making, and so they play a larger role in national development. As a result, successful decision-making, interpretation, and debate among the top class are essential components of national growth and progress. In other words, power dynamics among distinct elites are reflected in the policymaking process as the country develops. However, Nigeria's elite class appears to have assumed dimensions that are exceptional for actual functions in a developing country. An examination of current events in Nigeria demonstrates that the country's top class has no persistent or significant ties to the country's national exploit. Nigeria's elite group's formation and behavior have not been transformed into a source of national progress.

Political elites are people who wield authority in the state as a result of their statutory or institutional positions, or who have sway over policy decisions due to their membership in the ruling coalition. Furthermore, unlike knowledge-based elites, Marc (2008) believes that, given the numerous attempts to describe elites in the literature, it is nearly hard to come up with a broad and all-encompassing description. Rather, evaluate the parts that make up the notion, such as inequality, supremacy, and organization.

Despite the significant structural changes in the Nigerian democracy, the study's major premise is that individual members and groupings of the elite are derived from comparable and exclusive backgrounds. According to Henry (2011), there is a link between historically entrenched ideals and interests that inform the core political executive elite's political behavior and the restriction of possibilities to new groups. The stronger the power of a few persons or organizations in society, the more their rights, as well as the democratic system's openness, inclusiveness, and rule of law, may be threatened. As a result, political elites are reproduced rather than circulated. Reproduction is the result of common practices among specific groups of people with common backgrounds and social networks. As a result of this repetition, a hybrid type of government emerges. Hybridism refers to a combination of inadequate liberalization and systematically limited inclusion, as well as weak government.

The preceding explanation appears rational, but the interpretation of what occurs in Nigerian democracy, particularly in the recent general elections, demonstrates that ours is a democracy without democratic values. As seen by the previous general elections in Nigeria, we operate a democracy in which voting is the hallmark of political engagement. The fundamental expression of democracy abuse is the replacement of direct engagement before, during, and after elections with just voting in periodic elections. Democracy is badly exploited when citizens are not mobilized to participate in democratic activities and so become a part of the governance. People's turnout for political activities/elections in Nigeria was thought to be low in past elections because they were not adequately mobilized, and candidates for the election were more or less handpicked by political parties and influenced by political elites. Citizens' participation in governance is only seen in general elections, however it is minor (Sound, 2008).

Research Questions

The following questions were raised to guide this study;

1. Is there benefits attached to democracy?
2. What are the various abuses to democracy in Nigeria by political elite?
3. What can be identify as problems associated with democracy?
4. How is political participation promoting democracy in Nigeria?
5. What control measures should be put in place to strengthen democratic institutions in Nigeria?

Methodology

For this study, descriptive survey research was used. The design is appropriate since the study is descriptive in nature and is an examination in which data is collected from respondents with the goal of describing the population on a single variable via questionnaire. The study's population includes Ondo State's literate electorates. Three hundred electorates were chosen using a purposeful sampling strategy. The study focused on those with at least a first-year degree because they were considered literates. The instrument for collecting data for the study was a structured questionnaire which contain two sections (A and B). The questionnaire's section "A" was used to gather information about the respondents, while section "B" was used to gather data about the items presented. For each of the research questions, section "A" has four (4) items and part "B" has five (5) items. The items required respondents to choose the most relevant option from the possibilities supplied in section "A," while respondents in section "B" were to choose from the following: SA denotes strong agreement, A denotes agreement, D denotes disagreement, and SD denotes strong disagreement. The data was analyzed statistically using descriptive statistics such as frequency counts and percentages. The demographic data was analyzed using descriptive statistics, whereas the research questions were analyzed using frequency counts and percentages.

Results

As a consequence of the five research questions, the data was reviewed and sorted into relevant tables as shown below. All research questions with a mean of less than 2.50 will be rejected, while those with a mean of more than 2.50 will be accepted.

Research Question One: What are the various advantages of democracy?
To respond to this issue, data on the Benefits of Democracy were compiled and presented in Table 1.

Table 1: Various Benefits attached to Democracy

S/N	Items	SA		A		D		SD		
		F	%	F	%	F	%	F	%	(X)
1.	Democracy improves the quality of decision making	136	46.0	98	32.7	30	20.0	2	1.3	3.23
2.	Democracy provides a method to deal with differences and conflicts	168	56.0	116	38.7	5	3.3	3	2.0	3.49
3.	Democracy allows people to correct their own mistakes	88	29.3	156	50.7	25	16.7	5	3.3	3.06
4.	In a democracy, people rule themselves as leaders are elected by them	212	70.7	78	26.0	5	3.3-	-	3.76	
5.	Democracy respect fundamental human rights	64	21.3	194	64.7	19	12.7	2	1.3	3.06
	Weighted Mean								**3.30**	

Source: Field Survey, 2021

Table 2 shows a breakdown of the many democratic benefits. The weighted mean score of 3.30, which is higher than the normal mean score of 2.50, demonstrates that democracy has a variety of benefits. The findings revealed that democracy improves decision-making quality ($\bar{x}$ = 3.23), democracy provides a method to deal with differences and conflicts ($\bar{x}$ = 3.49), democracy allows people to correct their own mistakes ($\bar{x}$ = 3.06), democracy allows people to rule themselves ($\bar{x}$ = 3.67) and democracy respects fundamental human rights ($\bar{x}$ = 3.06). This finding shows that democracy has a number of advantages.

Research Question Two: What are the numerous political elite abuses of democracy in Nigeria?
To answer this topic, data on numerous political elite abuses of democracy in Nigeria was compiled and presented in Table 2.

Table 2: Various Abuse to Democracy in Nigeria by Political Elite

S/N	Items	SA		A		D		SD		
		F	%	F	%	F	%	F	%	(X)
1.	Nigeria democracy is abuse by political elite with high level of corruption	144	48.0	140	46.7	8	5.3	-	-	3.43
2.	Political elite abuse democracy through manipulation of electoral process	54	18.0	176	58.7	23	15.3	12	8.0	2.86
3.	Political elite abuse democracy with high level of nepotism and favoritism	50	30	188	62.7	9	6.0	2	1.3	3.21
4.	Political elite show no respect to fundamental human rights	96	32.0	76	25.3	40	26.7	24	16.0	2.73
5.	Political elite manipulate and take total control of the economy system	126	42.0	112	37.3	31	20.7	-	-	3.21
	Weighted Mean									**2.89**

Source: Field Survey, 2021

Table 2 shows an overview of numerous political elite abuses of democracy in Nigeria. With a weighted mean score of 2.89, which is higher than the conventional mean score of 2.50, the results suggested that democracy is being abused by the class in numerous ways. The results show that Nigeria's democracy is being abused by political elite, with a high level of corruption ($\bar{x}$ = 3.43), as well as manipulation of the electoral process ($\bar{x}$ = 2.87), a high level of nepotism and favoritism ($\bar{x}$ = 3.21), and a lack of respect for fundamental human rights ($\bar{x}$ = 2.73). Political elite also manipulate and take total control of the economy system ($\bar{x}$ = 3.21). This finding implies that political elites exploit democracy in a number of ways listed above.

Research Question Three: What is the problem associated with democracy in Nigeria?

Table 3: Problem Associated with Democracy in Nigeria

S/N	Items	SA		A		D		SD		
		F	%	F	%	X	%	F	%	(X̄)
1.	Nigeria democracy is marry with high level of corruption	94	62.7	51	34.0	5	3.3	-	-	3.59
2.	There is absent of independent of judiciary	94	36.0	54	36.0	2	1.3	-	-	3.61
3.	There is absent of independent electoral institution	76	50.7	61	40.7	13	8.7	-	-	3.42
4.	Nigeria democracy is couple with high cost of governance	33	22.0	107	71.3	9	6.0	1	0.7	3.15
5.	Insecurity has become the greatest threat to Nigeria nascent democracy	81	54.0	64	42.7	5	3.3	-	-	3.51
	Weighted Mean									**2.86**

Source: Field Survey, 2021

Table 4 shows the current state of the problem of democracy in Nigeria. With a weighted mean score of 2.86, which is higher than the conventional mean score of 2.50, the results revealed that Nigeria has democratic difficulties. The results show that Nigeria democracy is associated with a high level of corruption ($\bar{x}$ = 3.59), the absence of an independent judiciary ($\bar{x}$ = 3.61), the absence of an independent electoral institution ($\bar{x}$ = 3.42), Nigeria democracy is associated with a high cost of governance ($\bar{x}$ = 3.15) and insecurity has emerged as Nigeria's greatest threat to democracy ($\bar{x}$ = 3.51). This finding suggests that Nigerian democracy has issues.

Research Question Four: How is political participation promoting democracy in Nigeria?

Research Question Four: Political Participation Promoting Democracy in Nigeria

S/N	Items	SA		A		D		SD		
		F	%	F	%	X	%	F	%	(X̄)
1.	People participate in decision making to promote democracy	24	16.0	38	25.3	48	32.0	40	26.7	2.31
2.	Political participation help to determine governance	27	18.0	88	58.7		23	15.3	12 8.0	2.87
3.	Political participation reduce the level of political apathy	31	20.7	49	32.6	48	32.0	22	14.7	2.59
4.	Political participation reduce manipulation of electoral system	2	1.3	9	6.0	9.4	62.7	45	30.0	1.79
5.	Political participation promote political education within democratic	31	20.7	56	37.3	63	42.0	-	-	2.79
	Weighted Mean									**2.47**

Source: Field Survey, 2021

Table 4 shows the current state of political involvement and democracy in Nigeria. With a weighted mean score of 2.47, which is lower than the conventional mean score of 2.50, the results suggested that political involvement in Nigeria does not truly or has not promoted democracy. People participate in decision-making to promote democracy ($\bar{x}$=2.31), participation aids in governance ($\bar{x}$=2.87), political participation reduces political apathy ($\bar{x}$=2.59), political participation reduces electoral system manipulation ($\bar{x}$=1.79) and political participation promotes political education within democratic ($\bar{x}$=2.79). This finding shows that political involvement in Nigeria does not foster democracy.

Research Question Four: What control measures should be put in place to strengthen democratic?

Table 6: Control Measures should be put in place to strengthen Democratic

S/N	Items	SA		A		D		SD		
		F	%	F	%	X	%	F	%	(X̄)
1. 2.0	There should be 3.49 accountability and transparency		84	58.0	58	38.75		3.3	3	
2.	Democratic institution should be an independent body	69	46.0	49	32.7	30	20.0	2	1.3	3.23
3.	Democratic institution should not be influence	96	64.0	44	29.3	5	3.3	5	3.3	3.54

S/N	Items	SA		A		D		SD		
		F	%	F	%	X	%	F	%	(X)
4.	by political elite Promotions and appointment of democratic institution officials should base on merit rather than political influence		39	26.0	106	70.75		3.3	-	-
5.	There should be		32	21.3	97	64.719		12.7	2	

Source: Field Survey, 2021

Table 5 shows the current analysis on Control Measures that should be implemented to improve democratic institutions. With a weighted mean score of 3.30, all of the above control measures can strengthen democratic institutions in Nigeria, outperforming the standard mean score of 2.50. The following are the suggested control measures: Accountability and transparency (x=3.49), establishment of an independent body within democratic institutions (x=3.23), democratic institutions should not be influenced by political elite (x=3.54), officials should be chosen on merit rather than political influence (x=3.22), and corruption should be avoided (x=3.06).

Discussion of Findings

The first research question revealed that a large percentage of respondents benefited from democratic rule, with a larger percentage believing that democracy improves decision-making quality and provides a way for dealing with differences and conflicts. This is in line with the findings of Oladapo, 2019 in which it revealed that decision making during military administration is done authoritatively unlike during civilian administration. Another benefit of democracy, according to the findings, is that it allows people to rule themselves by electing leaders who respect fundamental human rights, but others believe that democracy has been abused by political elites. This finding is in agreement withAreola and Alike, 2020, in which they are of the opinion that many people abuse political processes because of weak legislation against such.

A large number of respondents feel and agree that Nigeria's political class have abused democracy. Nigeria's democracy is being abused by its political elite, who are rife with corruption and who manipulate the voting process. The political elite misuse democracy by showing a high level of favoritism and nepotism, as well as determining the character of the country's economy and showing no respect for the constitution. This is in line with the finding of Oladapo, Oyewale and Abayomi, 2020.

The final study question showed the control mechanisms that must be implemented in order to strengthen Nigeria's democratic system. These control mechanisms, according to the findings report, demonstrate the importance of accountability and openness in fostering citizen trust and promoting socio-political growth. A democratic institution should be an autonomous entity that is not influenced by the political elite.

Recommendations

Government should put in place strong legislation against the abuse of Political Process. There should be enlightenment program on the need for elites to always participate in political processes not only casting votes during elections.

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ATTITUDE OF STUDENTS TOWARDS VIOLENCE AND CULTISM IN SECONDARY SCHOOLS INIKPOBA-OKHA LOCAL GOVERNMENT AREA OF EDO STATE

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Abstract
The study investigated students' attitude towards violence and cultism in secondary schools in Ikpoba-Okha Local Government area of Edo State. To guide the study, two research questions were raised, and two null hypotheses were formulated. Descriptive survey research design was adopted. The population of the study consisted of 1681 students from 19 secondary schools in Ikpoba-Okha Local Government Area of Edo State, Nigeria. A sample of 300 students was selected using the simple random sampling technique. The instrument used for this study was a questionnaire titled 'Attitude of Students towards Cultism and Violence Questionnaire' (ASCVQ) which was developed by the researchers. Data collected for the study were analysed using t-test statistical analysis. Results showed that the students had a positive attitude towards violence and cultism There was no significant difference in students' attitude towards cultism and violence based on sex. It was concluded that students in secondary schools in Ikpoba-Okha Local Government Area of Edo State were favourably disposed to violence and cultism irrespective of their sex. It was therefore recommended that school counsellors should develop strategies to bring about cognitive restructuring in the students and work with their parents to ensure success of the therapy.

Key words: Violence, Cultism, Attitudes, Students, Secondary school, Counselling

Introduction

Violence is the intentional use of physical force or power, threatened or actual, against a person himself, another person or a group of persons, that results in (or is likely to result in) injury, death, psychological harm, deprivation or poor development (World Health Organisation, 2012). Violence has been described by WHO as a universal challenge as it pervades the lives of many people all over the world. Violence among young people, particularly in schools, affects not only the victims but also their parents, friends and the society. Violence has serious physical and psychological effects on children and these include physical injury, depression, posttraumatic stress disorder, loss of concentration, poor academic performance, chaos and loss of time, among others. Violence in school inhibits adolescents from attaining their dreams and aspirations especially as regards to academic achievement.

There is no single cause of violent behaviour but rather the causes are multiple and complicated, involving different stages. These include genetic properties which indicate that some individuals have inherent violent tendencies. Other factors are family and social structures, economic and social crises.

Changes in cultural structures and the breakdown of social value systems have resulted in distrust among people and prompted the display of aggressive behaviour which can be triggered at any time (Florea, 2013). Afolabi and Deji (2014) found that various forms of violence exist among secondary school students in Nigeria, ranging from verbal abuse to physical assaults, threat and attack with weapons. Obikeze (2009) also affirmed that violence is a problem facing secondary schools and it has constituted a lot of challenges to students thereby hindering their academic, moral and social development. School violence may be caused by psychological deficiencies created by dysfunctional homes. Obilor and Miwari (2021) identified dysfunctional homes and the mass media as causes of violence among secondary school students.

The home is the first social environment of the individual and a lot is learnt in the home. Anger, worry, hatred, inferiority complex and other negative emotions when learnt in the home can fuel violent behaviour which eventually spills into the school. In line with this assertion, Sibisi (2018) concluded that if violence is accepted at home as a behavioural norm, it implies its acceptability for use outside the home.

Another factor closely related to violence is cultism. Cultism can be defined as a ritual practice by a group of persons whose membership, admission policy and initiation formalities as well as mode of operation and activities have negative effects on both members and non-members (Ajayi, Ekundayo & Osalusi 2010). Cult activities place high premium on violence and disregard for human life. Cultism is a social menace inextricably linked with violence and crime. According to Benjamin (as cited in Adebumiti, 2021) cultism has always been a fertile breeding ground for armed robbery, kidnapping, political thuggery, drug addiction, militancy and other related crimes.

The problem of cultism is so overwhelming that nearly all levels of education are affected by it. For years now, cultism which began in the tertiary institutions is no longer restricted to that level of education but has spread to both the primary and secondary schools. The essence of secondary schools is to provide quality education by equipping the students with morals, knowledge, skills and abilities for self-improvement both at school and later in life but violence and cultism have negatively impacted the achievement of these goals. According to WHO report, violence is among the leading causes of death for young people aged 15-24 years worldwide (WHO, 2012). It is so pervasive that it is often seen as an inevitable human condition, a fact of life to respond to rather than avoid. Violence concerns not only the behaviour of the individual but also the entire system of interaction in the society. Literature on

Studies regarding students' attitude towards violence and their perceptions (Sharma & Ali, 2016; Karabacak & Kodan Cetinkaya, 2015), show that negative attitudes towards violence in adolescence are moderate and this poses a risk for violence tendency. Tanriverdi and Ozguc (2019) compared attitudes towards violence and aggression in children and adolescents of married and separated parents andfound that all the children were highly positively disposed to violence and aggression. There was no significant difference between the two groups of children in their attitude to violence and aggression. Gender has also been found to influence the expression of violence and aggression in individuals (Karabacak & Kodan, 2015; Davidson & Canivez, 2012).

In addition, attitudes towards violence were found to be significantly influenced by sex. Kodan (2013), Eksi, Okan and Guner (2016), Sharma and Ali (2016) and Karabacak and Kodan (2015) found in their studies on attitude and tendencies towards violence among students, that male students had higher tendencies towards violence than female students.

Regarding cultism, Alutu and Ojiyi (2015) investigated the attitudinal disposition to secret cult practices among undergraduate students in a Nigerian University and found that the students were positively disposed towards cultism. Gender was not a significant factor in the students' disposition towards secret cults.

Rationale for the Study

The emergence of secret cults in educational institutions is a threat to national peace and security. It is a threat to life-long education. Violence and secret cult activities in schools have led to the deaths of several students and staff (Adebumiti, 2021). Cult members manifest various forms of indiscipline and commit crimes including intimidation and blackmail of staff and students. Many young people are lured into joining cults because of peer pressure. In 1989, during the military rule in Nigeria, Decree 47 (prohibiting secret cult activities and practices in schools) was promulgated. Many students have been expelled from schools due to their involvement in cult-related activities. Over the years, several arrests of school children including primary and secondary school students have been made, some at the point of initiation of new members. Many school children have dropped out of school to evade arrest but to continue in violence and cultism.

Programmes have been organised by schools, Government and non-governmental organisations to dissuade students from joining cults and to encourage cult members to renounce their membership. In spite of these efforts made by various school authorities, successive governments and non-governmental organisations, secret cult activities have reached an alarming rate. None of the measures has achieved the expected and desired goal of eradicating violence and cultism in the schools and this is worrisome. In addition, literature on violence and cultism in Nigerian secondary and tertiary institutions has been mainly on the causes, consequences and strategies for eradication (Obilor & Miwari, 2021; Jumbo, Emeodu & Chukwu, 2021; Mba, Egwu & Emesini, 2018, Ajitani & Olaniyan, 2018) while little attention has been paid to the disposition of students towards the two phenomena.

Not all violent children and adolescents are cultists but cultists are always violent. Since attitudes are theoretical explanations of behaviour (Nunes, Pedneult & Herman, 2021), the present study was carried out to determine the attitudes of the secondary school students to violence and cultism. The study also determined the influence of sex of the students on their attitudes towards violence and cultism. It is expected that the results will assist school counsellors and psychologists to develop strategies that can be used in managing and eliminating the tendencies to, and perpetration of violence and cultism among secondary school students.

Research Questions

1. What is the attitude towards cultism among secondary school students in Ikpoba-Okha Local Government area of Edo State?
2. What is the attitude towards violence among secondary school students in Ikpobaa-Okha Local Government Area of Edo State?

Hypotheses

1. There is no significant difference between male and female students' attitude towards cultism in secondary schools in Ikpoba-Okha local government area of Edo state?
2. There is no significant difference between male and female students' attitude towards violence in secondary schools in Ikpoba-Okha local government area of Edo state?

Methodology

The study adopted a descriptive survey research design. The population of this study consisted of all secondary school students in Ikpoba-Okha local government area of Edo state. There are 19 secondary schools in Ikpoba-Okha local government and 1681 students. A sample of 300 secondary school students was selected using simple random sampling technique. There are nineteen secondary schools in Ikpoba-Okha local government. The first stage involved random selection of 5 secondary schools. In the second stage, 60 students were selected randomly from each school to make up the sample size of 300. The instrument for this study was a questionnaire tagged "Attitude of students towards Cultism and Violence Questionnaire" (ASCVQ) which was developed by the researchers from Literature reviewed on violence and cultism. The instrument had two sections – A and B. Section A sought demographic information about the respondents and section B consisted of 20 items (10 on violence and 10 on cultism, which the respondents responded to on a four-point likert scale of strongly agree (4), agree (3), disagree (2) to strongly disagree (1). The scores for negatively skewed items were reversed.

The instrument was validated by the researchers and a Measurement and Evaluation expert. To establish the reliability of the instrument, the test –retest method was adopted and Pearson Product Moment Correlation (PPMC) was used to analyse the data collected and an r - value of 0.701 was obtained. The instrument was administered to the respondents in their classrooms and completed instruments were retrieved same day. Data collected were analysed using Descriptive statistics such as mean and standard deviation to answer the research questions and independent sample t- test to test the hypotheses at 0.05 level of significance.

Results

Research Question 1. What is the Attitude towards Cultism among secondary school students in Ikpoba-Okha Local Government Area of Edo state?

Table 1: Descriptive Analysis of students' Attitude toward Cultism

S/N	Statements	N	Sum	Mean	S.D
1.	It is not wrong to indulge in cult activity in secondary school.	300	452	1.51	0.99
2.	Secondary school students who join cults rarely have time for their academic work.	300	550	1.83	1.02
3.	Students who engage in cultism run the risk of severe injury and/or premature death.	300	476	1.59	.90
4.	It is not a bad idea to join cult in secondary school before getting into higher institution.	300	410	1.37	0.75
5.	Joining cults for protection in secondary	300	512	1.71	0.96

S/N	Statements	N	Sum	Mean	S.D
6.	I support young adults' involvement in secret cult activities.	300	416	1.39	0.73
7	It is okay to join secret cult as long as it makes you happy.	300	520	1.73	0.93
8.	Cultists should disrupt academic activities to press home their demands.		300	504	1.68
9.	Cultism makes one to be respected among his/her mates.		300	600	2.01
10.	I have to join cult group for social	300	512	1.71	0.89

Criterion=25.00

Table 1 shows the mean scores of all the items on the scale for attitude of students towards cultism. From the table above, each of the means for all the items is less than 2.5 (Mean of a four point Likert rating scale). The Composite Mean (16.51) is less than the scale means of 25.00 which is (2.5 multiplied by 10 items). This shows that the students' in secondary school in Ikpoba-Okha Local Government Area of Edo State have positive attitude towards cultism.
Research Question 2. What is the Attitude towards violence among secondary school students in Ikpoba-Okha Local Government Area of Edo state?

Table 2: Descriptive Analysis Students' Attitude towards Violence

S/N	Statements	N	Sum	Mean	S.D
1.	Students need to be violent to avoid being bullied.	300	626	2.09	1.01
2.	I look forward to engaging in violent acts in school.	300	482	1.61	0.90
3.	I don't have anything against violence in secondary school.	300	642	2.14	1.19
4.	Participating in any form of school-based violence is not bad	300	482	1.61	0.86
5.	Students need to be violent to show that they are serious with what they want.	300	574	1.91	0.99
6.	Violence is good for protesting bad leadership in secondary schools.	300	594	1.98	0.97
7.	I strongly detest students' engagement in violence.	300	618	2.06	1.14
8.	I support fighting, if my friends are offended	300	524	1.75	0.84
9.	Violence is a good way to gain respect	300	458	1.53	0.83
10.	My friends are violent why not me?	300	504	1.68	0.91
	Attitude towards Violence	**300**	**5504**	**18.35**	**5.15**

Criterion=25.00

Table 2 shows the mean scores of all the items on the scale for attitude of students towards violence. The table shows that the students have positive attitude towards violence, this is because the means are all less than 2.5 (Mean of a four point Likert rating scale). The

Composite Mean (18.35) is less than the scale means 25.0 which is (2.5 multiplied by 10 items). This shows that the students' in secondary schools in Ikpoba-Okha Local Government Area of Edo State are positively disposed to violence.

Hypothesis 1. There is no significant difference between male and female students' attitude towards cultism in secondary schools in Ikpoba-Okha Local Government Area of Edo State?

Table 3: Independent Sample t-test of difference in student's Attitude towards Cultism by sex

Sex	N	Mean	SD	df	t-value	p-value
Male	139	16.87	4.47	298	1.285	**.200**
Female	161	16.91	4.63			

$\alpha = 0.05$

Table 3 shows the independent sample t--test of difference between male and female students' attitude to cultism. From the table the meanscores are 16.87 and 16.19 for males and females respectively. The t-value = 1.285, and the p- value is 0.200 The p-value is greater than the alpha value of 0.05 and so the hypothesis was not rejected and it was upheld that there is no significant difference between male and female students' attitude to cultism.

Hypothesis 2. There is no significant difference between male and female students' attitude towards violence in secondary schools in Ikpoba-Okha Local Government area of Edo state?

Table 4: Independent Sample t-test of difference in student's Attitude toward Violence

Sex	N	Mean	SD	df	t-value	p-value
Male	139	18.94	4.82	298	1.871	**.062**
Female	161	17.83	5.37			

$\alpha = 0.05$

Table 4 shows the independent sample t-test of difference in students' attitude towards violence based on sex. From the table, the means are 18.94 and 17.83 for males and females respectively. The t-value = 1.871, it is not significant, at p = 0.062 which is greater than the alpha –value of 0.05. Therefore, the null hypothesis is retained. This implies that the attitude of the students towards violence is not influenced by sex.

Discussion of Findings

The results of the study show that the students in secondary schools in Ikpoba-Okha Local Government Area of Edo State have positive attitude towards violence and cultism. This implies that students possess positive tendencies towards violence and cultism. This poses a risk for violence and approval of cultism. There is much reported violence in the news and social media and children and adolescents have access to this information. This finding corroborates the findings of Gozuyesil, Unal-Ashan and Karatepe (2020), Tanriverdi and Ozguc (2015), Karabuluthu (2015), Kodan Cetinkaya (2013) and Alutu and Ojiyi (2015). While Gozuyesil, Unal-Ashan and Karatepe (2020), Tanriverdi and Ozguc (2015), Karabuluthu (2015), and Kodan Cetinkaya (2013) found that all the children in their samples

of study had positive attitude to violence and aggression, Alutu and Ojiyi(2015)also found that their sample of study had highly positive attitude to cultism. The results are also in consonance with Karabacak and Kodan Cetikaya(2015) who found that adolescents' negative attitudes towards violence were moderate indicating a risk for violence tendency. The findings of the study also indicate that sex of the students had no influence on their attitudes to violence and cultism. This could be due to the general breakdown in the family system and the society. Violence is perpetrated by both males and females, there are also all male, all female and mixed- sex cult groups in schools and outside the schools. This result also corroborates Alutu and Ojiyi (2015) who found that sex was not a significant factor in the attitudinal disposition towards cultism in the sample of study. The finding is in contrast with Kodan Cetinkaya (2013), Sharma and Ali (2016), Eksi, Okan and Guner (2016) and Gozuyesil, Unal-Ashen and Karatepe (2020) who variously found that males had a more positively disposed to violence, had a greater tendency to approve and accept violence and were more inclined to violence than females

Conclusion

From the results of the study, it can be concluded that students in secondary schools in Ikpoba-Okha Local Government Area of Edo State have positive attitude towards cultism and violence irrespective of their sex. This is an indication that both male and female secondary school students were positively disposed to violence and cultism.

Recommendations

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

1. The school counselors should focus on cognitive restructuring in counselling the students against violence and cultism. Thoughts such as violence is a good way to gain the respect of others and I have to join a cult group for social recognition and respect among my mates are negative and dysfunctional beliefs. In the counselling process, students will be assisted to identify and put into words their thoughts, recognize their thought errors and replace their irrational and dysfunctional beliefs and thoughts with rational ones, restating them in a more beneficial way.
2. Remedial seminars should be organized by the schools where the students will be properly educated on the negative effects of a life of violence and cultism.

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INFLUENCE OF PARENTING ON STUDENTS EDUCATION IN SELECTED TERTIARY INSTITUTIONS IN ONDO STATE, NIGERIA

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Abstract
The study investigated the influence parenting has on education of students in some selected tertiary institutions in Ondo State, Nigeria. The population for the study consisted of all parents and students in Adeyemi College of Education, Ondo and Adekunle Ajasin University, Akungba Akoko, institutions. The study adopted a descriptive survey research design and stratified random sampling technique was used in selecting 100 respondents from the two institutions. Likert scale was used to analysed the data collected. The results of the study revealed that parents are seriously responsible for the education of the students, it also revealed that the education of students within good homes shows in them comparing to students that come from poor background. The study therefore recommends that parent should be able to check on their children and know much about their affairs in the school, also it is recommended that parent should be responsible for the poor performance of their children.

Keywords: Parent**,** Parenting Style, education, family, parental involvement.

Introduction

The family into which a child is born is considered as a social group characterized by common belief. When a child is born, the family is the first primary group with which the child comes in contact with. The home lays the psychological, moral and spiritual foundation in the overall development of the child. Every child comes from a home and the home has profound roles to play in the education of a child be it negatively or positively. It is also regarded as a place where the child begins to learn the norms and values of the society in which they find themselves. Sam (2010) opined that the family remains a strong social structure within the society. It is a social unit where people learn important life skills and beliefs.

Arikewuyo and Babatunde (2020) opined that every child deserves a meaningful life which starts with adequate care by the parents. This means that basic needs of the child include provision of food, clothes, and shelter and affection of the parents when it comes to solving social and psychological problems. Therefore, providing basic needs for the child extend to medical care, guiding the child to be godly, providing adequate security against any harm. These and many more are the responsibilities of the parents to the child. When the child is of school age, it is the duty of the parents to enroll him/her in school where he will acquire formal education aside from what he learns from home.

Primary knowledge of what is right and what is wrong are learnt through the parent's instructions and advice from a very young age. It is through constant parental guidance that one's life is shaped and it also defines what one is about to become. Guidance could be of any form. The parental guidance could be through constant advice and instructions or by setting themselves as an example for the children (Eilam, 2011). Either way, the child's thoughts and

understanding of the world is altered. The degree to which the parents do the same also matters and the characteristics seen in the children as a result of this guidance also varies from one child to another with variation in the degree. To set in the right track, one child may need constant guidance while another may get affected because of constant intervention (Mahaffy, 2014).

According to Goldsmith (2000) children learn their attitudes primarily from their parents. Therefore, parent plays a fundamental role in forming the values of children. The ability to cope with and adjust to life problems and demands of the society is based upon the psychological foundations laid by the parent to the children. Elkin and Handel (2008) noted that, throughout the children's dependent years, the parent provide them with food, clothing shelter, a safe and clean environment, adequate supervision and access to necessary health care and education.

Parenting refers to the aspects of raising a child aside from the biological relationship (Grey, 2016). This implies the specific behaviour that a parent uses in the upbringing of a child (Ashish, 2014). According to Grey (2016), parenting involves emotional, physical, social financial and spiritual upbringing of the child. The nature of parenting contributes to the child's physical, emotional status, social and cognitive development. Therefore, poor parenting leads to inability of parents to train their children to become social adjusted to life demands and the demands of the society. When parents become involved in children's education at school and in the community, the results include one or more of higher grades and test scores, better attendance and regularly completed assignments, fewer placements in special education and remedial classes, more positive attitudes and behavior in school, higher graduation rates, and greater enrollment in secondary education (Rahman, 2001). This implies that children perform better in school when their parents are involved.

Zellman and Waterman (1998) cited in Rahman (2001) found important contributions of parent enthusiasm and positive parenting style to child outcomes. This suggests that how parents interact with their children is more important in predicting academic outcomes than the extent to which they are involved at school. Parenting style is not enmeshed in a social context defined by poverty, wealth, or ethnicity. It may be both teachable and changeable, a most encouraging fact for parents who want to help their children and for those who want to help parents help their children.

The impact that parents can have on their children education and learning outcome transcends income levels and social status. Infact, the most accurate predictor of a student achievement in school is not income or social status of parents, but the extent to which that parent is able to; create a home environment that encourages learning, express high expectations for their children's achievement and future careers and become involved in their children's education at school and in the community. If two of these three criteria are accomplished, children of low income families will achieve at or above the levels expected of middle class children.

However, without a research to prove the impact of poor parenting on children education, many parents may not be aware of the significant of their involvement does in their children education This explains how parenting is highly required not only in financing education of a child but also in monitoring the whole learning process, hence the need for a study like this.

The term parenting is a derivation from parent which means those who gave birth to a child which could be biological or otherwise. Parent could be regarded as the mother or

father of a child who are the persons who biologically gave birth to the child. They are the first two persons that the child meets after birth. Parent could be one who take care of the child right from birth who the child can refer to as those who gave birth to him/her. According to Merriam-Webster (2019) parent is one who begets or brings forth an offspring to life. A person who brings up and take care of another person like his own child can be referred to as a foster or surrogate parent. Vocabulary.com Dictionary (2019) defines parent as one who nurtures, fledge, cradle, and rear and raises a child. From the above definitions, one will deduce the kind of relationship that should exist between parents and their children and the kind of strong bond that holds them together because they are the vehicles on which the child was driven to life.

Parenting a child is all the cares a child needs from an infant to adulthood. According to Wikitionary (2019) it is the ability to support and promote the following needs of the child physical, moral mental, emotional, intellectual, psychological and social that can aid the development of the child from infant to adulthood. Parenting of the child is a purposive process which involves the survival of the child on how to live a meaningful life. It is all the activities that can make the child feels a sense of belonging so as to enable him actualize his capabilities and potentials. Parenting is an activity that directly involves the parents of the child and other family members on how to take care of the child in all aspects. Cambridge (2019) defines parenting as raising of children and all the activities involved in it. Parenting role is a very vital experience which goes beyond just giving birth to the child alone. It requires adequate care of the child. It has to do with how the child is well catered for in terms of providing the basic needs for him at every stage of his life until he is old enough to care for himself.

Social class, wealth, culture and income have a very strong impact on what methods of child rearing parents use.(Lareau, 2002). Cultural values play a major role in how a parent raises their child. However, parenting is always evolving, as times, cultural practices, social norms, and traditions change (Shizuka, 2019). In psychology, the parental investment theory suggests that basic differences between males and females in parental investment have great adaptive significance and lead to gender differences in mating propensities and preferences

However, a family's social class plays a large role in the opportunities and resources that will be available to a child. Working-class children often grow up at a disadvantage with the schooling, communities, and level of parental attention available compared to those from the middle-class or upper-class. Also, lower working-class families do not get the kind of networking that the middle and upper classes do through helpful family members, friends, and community individuals or groups as well as various professionals or experts

A parenting style is indicative of the overall emotional climate in the home. Developmental psychologist Diana Baumrind identified three main parenting styles in early child development: authoritative, authoritarian, and permissive (*McKay, 2006).* These parenting styles were later expanded to four to include an uninvolved style. These four styles involve combinations of acceptance and responsiveness, and also involve demand and control. Rubin, (2015) found out that parenting style is significantly related to a child's subsequent mental health and wellbeing.

In particular, authoritative parenting is positively related to mental health and satisfaction with life, and authoritarian parenting is negatively related to these variables. With authoritarian and permissive parenting on opposite sides of the spectrum, most conventional modern models of parenting fall somewhere in between.

Described by Baumrind as the "just right" style, it combines medium level demands on the child and a medium level responsiveness from the parents. Authoritative parents rely on positive reinforcement and infrequent use of punishment. Parents are more aware of a child's feelings and capabilities and support the development of a child's autonomy within reasonable limits. There is a give-and-take atmosphere involved in parent-child communication, and both control and support are balanced. Some research has shown that this style of parenting is more beneficial than the too-hard authoritarian style or the too-soft permissive style Hedstrom. This parenting style results from successful, and happy children.

When practiced without physical punishment, one gets the most favorable results with the least issues in today's world. These children score higher in terms of competence, mental health, and social development than those raised in permissive, authoritarian, or neglectful homes.

Authoritarian parents are very rigid and strict. High demands are placed on the child, but there is little responsiveness to them. Parents who practice authoritarian-style parenting have a nonnegotiable set of rules and expectations strictly enforced and require rigid obedience. When the rules are not followed, punishment is often used to promote and ensure future compliance. There is usually no explanation of punishment except that the child is in trouble for breaking a rule.] This parenting style is strongly associated with corporal punishment, such as spanking. A typical response to a child's question of authority would be, "because I said so." This type of parenting seems to be seen more often in working-class families than in the middle class. In 1983, Diana Baumrind found that children raised in an authoritarian-style home were less cheerful, moodier, and more vulnerable to stress. In many cases, these children also demonstrated passive hostility. This parenting style can negatively impact the educational success and career path, while a firm and reassuring parenting style impact positively

Permissive parenting has become a more popular parenting method for middle-class families than working-class families roughly since the end of WWII. (Lassonde, 2017) In these settings, a child's freedom and autonomy are highly valued, and parents rely primarily on reasoning and explanation. Parents are undemanding, and thus there tends to be little if any punishment or explicit rules in this parenting style. These parents say that their children are free from external constraints and tend to be highly responsive to whatever it is that the child wants.

Children of permissive parents are generally happy but sometimes show low levels of self-control and self-reliance because they lack structure at home.

An uninvolved or neglectful parenting style is when parents are often emotionally or physically absent. They have little to no expectations from the child and regularly have no communication. They are not responsive to a child's needs and have little to no behavioral expectations. If present, they may provide what the child needs for survival with little to no engagement (Brown, 2008). There is often a large gap between parents and children with this parenting style. Children with little or no communication with their own parents tend to be victimized by other children and may exhibit deviant behavior themselves. (Finkelhor, 2009). However, Children of uninvolved parents suffer in social competence, academic performance, psychosocial development, and problematic behaviour.

Parent psychosocial health can have a significant impact on the parent-child relationship. Group based parent training and education programs have proven to be effective at improving short-term psychosocial well-being for parents. There are many

different types of training parents can take to support their parenting skills. Courses are offered to families based on effective training to support additional needs, behavioral guidelines, communication and many others to give guidance throughout learning how to be a parent.

Childbearing and caring are the responsibilities of the parents. Upbringing of a child is a major responsibility that needs proper, adequate monitoring and supervision by both the parents and the people around the child. The parents are the first contacts of the child. They are the first set of people the child recognized before his immediate family members and extended community. Whatever training given to him by the parents is what will reflect in his character as either a good or bad. Parents are the mirror through which the child sees the world. They are in the position to nurture the child in a proper way to live a decent and worthy life before he is old enough to decide for himself on vital issues. Pallottine (2017) attests that child upbringing is not an easy task; it takes a collective responsibility of both the father and the mother to raise a child that will be useful to the family and society at large. When the child is a baby, it is their responsibility to provide the child with feeding, clothing, medical care and affection. Nothing is important to the child at this age than adequate care from the parents. As the child grows up, some other responsibilities will be added such as protecting the child against harm or dangers. Collective responsibilities of training and retraining of the child becomes the duty of the extended family which starts from greeting, appreciation and respect for elders. Olusegun and Idowu (2016) are of the opinion that, parents are supposed to provide an environment for their children free of hitches where they develop morally, socially an academically.

The parents should provide an enabling atmosphere which will facilitate the growth and development of the child where he cannot be harassed or sexually abused. Bulus (2013) attests the duty of the parents to bring up their children in an atmosphere where there is peace and self-confidence and imbibe moral lessons on how to relate with the family members and the extended community. The child should not be brought up in an environment that is full of, threat, fear and abuse because of the implications it may have on the child as he grows up. An environment that is full of fear, threat and abuse will rear a child who will become aggressive, and disrespectful. Sending a child to school is another important aspect of his life because of the knowledge and skills he will receive from school which prepare him for the future. It is in school that he will earn what he wants to be in future. According to Zahid (2015), enrolling the child in a school means bringing the child to an environment where manner, etiquette, approach ,kindness, love ,how to react to issue and solve personal problems are taught to the child. The school environment, the teachers and peer group have roles to play in reshaping the child to be a better person who will be academically sound. The school environment allows the child to mix with different people that will have impact in his life to become an elite and a respected member of the society.

Purpose of the Study

The aim of the study is to examine the influence of parenting on education of students in some selected tertiary institutions in Ondo state.

The specific objectives are to:

i. find out the extent to which parent get involved in the education of students in tertiary institution in study area.
ii. examine the influence of parents on the educational background of students of tertiary institutions in the study area

Research Questions

The following questions were raised to guide the study:

i. To what extent do parents get involved in the education of the students in the selected tertiary institution in Study Area?
ii. What influence does parental background have on the educational process of students in tertiary institution in study area?

Hypotheses

The following research hypotheses were formulated to guide the study

(i) H_i: There is no significant difference in the opinion of students on how parents get involved in the education of students in tertiary institution in the study area.

(ii) H_{ii}: There is no significant difference in the opinion of students on the influence of parents on educational background of students in tertiary institution in the study area.

Methodology

Survey research design was adopted to determine parenting and its influence on students of tertiary institution in Ondo State. This type of research that used Parental Authority Questionnaire (PAQ) which was developed by Buri (1991). Survey design allowed for selection of sample that represented a large population such as in this study. The both scales used in the study were 4-point Likert scale ranging from Agreed, Strongly Agreed, Disagreed, and Strongly Disagreed. Finally the collected data related to major study variables was analyzed by using t- test to analyze the hypothesis to test the significant of the result. The participants were students of Adeyemi Federal University of Education and Adekunle Ajasin University, Akungba Akoko. Parents of the same students also participated in the study. Stratified sampling techniques was used to select the university and students along with their parents. Two strata of students along with their parents were formulated. A number of 60 and 20 parents, students of 18-30 years of age participated in this study. Only

Hypothesis Testing

Ho_i: There is no significant difference in the opinion of students on how poor parent get involved in the education of students in tertiary institution in the study area

Table1: T-test Analysis of difference on the opinion of students on parents' involvement in the education of students in higher institution

Participants	N	Mean	SD	df	t	Sig.	R
Parent	30	6.6	28.28	80	11.42		
Student	60	20	9.47				

From the table 1, there is a significant difference in the opinion of parents involvement in the education of students ($t = 11.42, df = 79; p < .05$. Therefore, the null hypothesis that says there is no significant difference in the opinion of students in the involvement of parents in the education of students is hereby rejected.

Hypothesis Testing

Ho_2: There is no significant difference in the opinion of students on the influence of parental background on educational process of students in tertiary institution in the study are

Table 2: Analysis of variance of students' opinion on the influence of parental background on the education process of students in Tertiary institution

Participants	N	SD	Variance	df	F	Fcrit	Sig.	R
Parent	60	28.28	799.75	79	8.9	2.33		
Student	20	9.47	89.68					

Table 2 reveals that there is a significant difference in the opinion of students on the process of parental background of the students in the study area ($F_{2,78}$)= **8.9** , the Cal F-test is less than F crit value which **2.33**,the hypothesis is not accepted

Data Analysis

Likert scale was used to analyse the perception of the Respondents by calculating the average mean of the respondents' reactions, and the gross arithmetic mean would be used to determine both the acceptability and rejection of the respondents' perceptions and the hypothesis would be tested at 0.05 significance level.

Section B: Perception on the influence of parents on the extent to which they are involved in their children education

Variables	SA	A	D	SD	Mean	Remark
Does your parent always beating you?	8	5	4	3	2.3	Reject
Does your parent uses punishment to correct you at home?	7	6	4	3	2.3	Reject
Does your parent authoritative control you?	8	6	4	2	2.3	Reject
Does your parent cares or not cares about your education	7	6	4	3	2.4	Accept
Does your parent involved in checking your activities in the school?	8	6	4	2	2.7	Accept
GAM					**2.4**	

The decision rule for the mean was guided using the mean weight value and the gross arithmetic mean score of 2.4 as cut-off point. This implies that, items with mean score of 2.4 and above was accepted as 'accept' while those that fall below 2.4 was regarded as 'disagreed'. On the other hand, the decision rule for the test was guided on “reject null hypothesis, if the calculated mean is greater than the table value the hypothesis would be rejected and if the table value is greater than the calculated value the hypothesis would be accepted.

Section C:Perception on the poor parenting on the moral standard of students

Variables	SA	A	D	SD	Mean	Remark
Poor parenting discourages the spirit of self-discipline in a child?	14	26	10	10	7.3	Reject
Poor parenting hinders the child the opportunity of becoming responsible citizen in life?	18	20	12	10	7.4	Reject

Variables	SA	A	D	SD	Mean	Remark
Poor parenting hinders the love and consistent communication between the parents and child?	15	25	12	08	7.4	Reject
Poor parenting instills the spirit of self-dependent in the child not to rely on others?	18	25	12	05	7.7	Accept
Poor parenting instills the spirit of anxiety and fear of succeeding on their moral and academic life?	20	25	10	05	7.7	Reject
GAM					**7.5**	

The above decision rule is for 7.5 every section that is less than the prescribed 7.5 is term as disagreed ,but those that is greater than 7.5 is term as agreed, checking on the first item, the GAM is greater than the Arithmetic mean which mean that the decision should be rejected. The second item shows that it should also be rejected because the GAM is greater than the mean. The same applicable to the rest of the variables

Section D: Perception of students on the position of the parents

Variables	SA	A	D	SD	Mean	Remark
Your parent pay your tuition fees as at when due?	18	20	12	10	7.4	Accept
Did parent give pocket money each time you are going to school?	18	24	16	02	7.8	Accept
Parent ready to finance academic pursuit to master's level?	16	24	12	08	7.3	Accept
Parent motivate with gifts at the end of every academic session?	18	20	12	10	7.0	Reject
Students who come from poor family background have lower self-esteem in class than those who come from rich family?	16	20	14	10	6.9	Reject
GAM					**7.3**	

The decision of the above table is 7.3,the first item is accepted because the mean weight value is lesser than the arithmetic mean, the same applicable to the second variables, the arithmetic mean is greater than the mean weight value of the table, all other variables are rejected

Conclusion

It can be stated that parents have important role to play in the life of the students, it was gotten from the study that parents are somehow incapacitated in taken care of their wards, especially in the higher institutions, the rate at which students cope with their studies is very low, because of the parental implication, based on the findings from the study, the moral standard of the students, is quite low, it was revealed that poor parenting has effect on the behavioral pattern of the students.

Recommendations

It is recommended that parents should be able to visit their wards in the school on regular basis. They should sponsor their wards and give them encouragement. Parents, especially those with limited means of sustenance should encourage their wards against the spirit of anxiety and fears about their academic performance

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CLASSROOM ENVIRONMENT AND LEARNING OUTCOMES OF CHILDREN WITH FINE MOTOR SKILL DEVELOPMENTAL COORDINATION DISORDER IN OSUN STATE, NIGERIA

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Abstract

The study investigated classroom environment and learning outcomes of children with fine motor skill developmental coordination disorder in Osun State, Nigeria. Descriptive survey design was used to carry out this research. The study population comprised all lower primary school pupils and their teachers in Osun state. The sample size consisted 106 respondents (91 pupils and 15 teachers). Multistage sampling procedure was used to select the sample for the study. Three instruments were used to collect data for the study namely: Fine Motor Skills Questionnaire (FMSQ), Dexterity Observational Checklist (DOC) and Art and Handwriting Test (AHT). Data collected was analysed using descriptive statistics of frequency, percentages, mean and ranking. Findings on the existence of fine motor skills developmental coordination disorder indicated that illegible handwriting due to poor classroom environment was prevalent among school children with a mean value of 2.51. Finding on the available instructional materials as a form of classroom environment for teaching pupils with developmental coordination disorder and the quality of classroom environment indicated that the available and working materials were pencils, eraser with mean value of 1.00. Based on the findings the study recommended among others that schools should be equipped with facilities via a good classroom environment that can help children with fine motor skills developmental coordination disorder to improve their learning.

Keywords: Classroom environment, Developmental coordination disorder, Motor skills, Children

Introduction

Education plays a very important role in the lives of children. It helps the children to acquire knowledge, skills, values, morals, beliefs, and habits by receiving systematic instruction, especially at school. It is the development of the mind. Education generally enables young children to develop the ability to reason logically, make judgments and prepare them for adulthood. Education allows for children's total development- physically, academically, socially and emotionally. Scholars like Mpotela (2014) and Adetuyi (2016) asserted that education brings about changes in the lives of learners after they have been exposed to viable content over a period of time.

Indeed, children spend most of their time in a school classroom. A classroom is a place where children learn different skills necessary for them to attain global success in the society. The learning environment helps children thrive. A classroom environment is the learning environment created in the classroom that will maximize instructional time, help children feel secured, supported and motivated to learn. Duruji, Azuh and Oviesoge (2014) observed that learning environment remains an important area that should be studied and well managed to enhance children's academic performance in the school. A classroom environment can be set up in a way that encourages creativity or discourages creativity.

Children's development is directly linked to his or her ability to interact with their environment; children develop an understanding of themselves through their interaction with events and materials outside themselves. Every environment has the ability to contribute or retard this process.

There are many factors that can affect this environment. These include tangible (physical) and intangible factors. Physical classroom environment refers to the physical feature of the classroom Learning takes place within a web of social relationships as teachers and pupils interact formally and informally. Class size is an important factor that influences the choice of desirable methods of practice that the teacher uses in the process or curriculum transaction. Catron and Allen (2017) added that the curriculum should include play and other creative activities as a way of making the learning environment friendly.

Favourable physical classroom has an important positive influence on the efficiency of the people in the school and acts as a factor towards achieving the purpose of teaching and learning. Classroom environment is one of the most important factors affecting children learning. Children learn better when they view the learning environment as positive and supportive (Okewole, Iluezi-Ogbedu & Osinowo 2015). However, physical environment in classrooms is not conducive for the teaching of children with the problem of developmental coordination disorder (fine motor skills). This was why Halstead (1974) suggested that the physical environment should be designed in such a way that it will not obstruct learning process.

Common classroom conditions can and do affect many children at one time or the other, and in one way or the other but some children are especially vulnerable to classroom hazards. Children with fine motor skills problems may be the most vulnerable. The standard classroom is to have desks arranged in a row. This method of arrangement makes children with developmental coordination disorder lose interest in writing and associating socially. A well-designed, safe and responsive environment is an important first step in including young children with developmental coordination disorder (DCD). If the learning environment fails to provide the support needed to help these children with developmental coordination disorder (DCD), the teacher must make changes to maximize their participation in planned activities, interactions and routines. These intentional changes can be small yet they can bring about improvement in the degree of that child's learning and participation

Developmental Coordination Disorder is a neurological problem that affects the gross and fine motor skills of children. It is classified as a motor disorder alongside stereotype movement disorder. Children with DCD find it difficult to perform skills that have to do with coordination. Skills like writing, tying shoelaces, buttoning of shirts, using cutlery, drawing, painting, the use of scissors and difficulty using bicycle. They are generally poor at sports and other forms of physical activities. Sugden and Wright (2016) stated that children with DCD experience significant difficulties in motor learning and in the performance of functional motor task that are critical for success in their daily lives such as activities they perform at home, at school and during play. Developmental Coordination Disorder (DCD) is a disorder that affects children's day to day activities.

Secondary problems that can be linked with DCD are physical health challenges such as obesity and lower aerobic level due to lower activity level. Other behavioural problems are social emotional and academic problems. There are some co-occurring problems that can be linked to DCD. They are: Attention Deficit Hyperactivity Disorder (ADHD), speech and language disorder and visual-motor deficit (Wendelborg &Tossebro, 2011). Beyond the multiple motor deficit, about 50% of the children diagnosed to have

developmental coordination disorder finds it difficult to write, (Hamstra-Bletz &Blote, 1993). Handwriting skills are vital prerequisites for communication. The inability of children to develop efficient and legible handwriting affects their academic success or performance. Hamstra - Bletz and Blote (1993) defined dysgraphia is a disturbance in the production of written language related to the mechanics of writing.

Handwriting problems can begin as soon as a child starts classes and then to letter formation and as a result, prevent children from writing words quickly without much variability between and within the letter. Handwriting is related to writing and clear instruction on how to write is one of the important elements in an early childhood programme to prevent writing difficulties. Unfortunately, many children struggle in school because of dysgraphia, many children with this disorder cannot meet up with written assignments, write legibly or put their thoughts down on paper. This usually affect the outcomes of these concerned children.

Learning outcomes as the name implies are the output required of learners after they have been exposed to learning content over a period of time. Although, there are the generally accepted learning outcomes referred to as “learning taxonomy”, academic performance and academic achievement share a thin line with the concept of “learning outcomes”. Once the first step of stating and refining learning objectives is accomplished, the rationale proceeds through the steps of selection and organization of learning experiences as the means for achieving outcomes, and, finally, evaluating in terms of those learning outcomes. The term learning outcome refers to the interaction between the learner and the external conditions in the environment to which he can react (Daso, 2013). The performance of the learner goes a long way to relate to the achievement of the learners in the schools which is obvious in the way that the learners are brought up in the school. This could also be referred to as learning outcomes.

Indeed, there is strong evidence that enriched stimulating environments and high-quality pedagogy are fostered by better-qualified staff and better-quality pedagogy which leads to better learning outcomes. Chen and Wang (2007) collected relevant data and tested the null hypotheses to justify no positively significant influence of: learners' interest in learning on their learning outcomes (academic achievement); learners' learning hours on their learning outcomes; teachers' instructional attitude on learners' learning outcomes; interaction of learners' interest in learning and teachers' instructional attitude on learners' learning outcomes; interaction of students' learning hours and teachers' instructional attitude on students' learning outcomes. The exit at which this can be linked to children with fine motor skill Developmental Coordination Disorder is yet to be investigated, thereby creating a gap to be filled by this study.

Teachers need to have knowledge of various learning disabilities especially as it affects teaching and learning process vis a vis the learning outcomes in the classroom. They should be sensitized on how the classroom environment should look in order to help children with fine motor skills and also be aware of the signs and symptoms of dysgraphia and not conclude on the child's inability to write due to sloppy handwriting. A child can be highly intelligent but have classroom learning problems (Richard, 2007). This can hinder the child's ability to keep up with his or her mate. Early identification of fine motor skills problems is very important. Developmental coordination disorder can affect a child's self-esteem and emotional wellbeing**.** The classroom environment should be well stimulating, furnished and accommodating in order to help children with dysgraphia learn effectively. The teacher should be sensitive enough to note which part of the writing process are most difficult for the

child because children with dysgraphia can exhibit high academic achievementsin other subjects (Richard, 2007).

Despite the fact that researchers have rarely shown interest in Developmental Coordination Disorder, many questions still remain unanswered regarding the prevalence of this disorder in schools. Observations have shown that teachers may not be fully aware that classroom environment may have a great influence on children with developmental coordination disorder and how they write. Difficulty in writing affects the learning and behaviour of children including the average intelligence. Moreover, the influence of classroom environment on children with fine motor skill Developmental Coordination Disorder is yet to be adequately investigated, hence this study.

Purpose of the Study

The study investigated classroom environment and learning outcome of children with fine motor skill developmental coordination disorder in Osun State, Nigeria. The specific objectives are to:

i. establish the existence of variants of fine motor skills developmental coordination disorder among school-aged children in Osun State;
ii. investigate the prevalence of variants of fine motor skills developmental coordination disorder among school-aged children in the study area; and
iii. determine the quality of classroom environment in schools within the study area.

Research Questions

The following questions were answered in this study:

i. What are the existing variants of fine motor skills developmental coordination disorder among school-aged children in Osun State?
ii. What are the prevailing variants of fine motor skills developmental coordination disorder among school-aged children in Osun State?
iii. What is the quality of classroom environment in schools within the study area?

Methodology

The study adopted the descriptive survey research design. The population for this study comprised all lower primary school pupils with fine motor skills developmental coordination disorder in Osun State and their teachers. The sample size consisted of 106 respondents (15 teachers and 91 pupils).From each of the three senatorial districts in the state, one local government area was selected using simple random sampling technique. Five primary schools were randomly selected from each of the local government areas, making a total of 15 schools. One intact class of primary three was selected from each of the schools using simple random sampling technique. Three self-designed instruments were used to collect data for the study. These are Fine Motor Skills (Writing) Coordination Questionnaire (FMSQ), Dexterity Observational Checklist (Writing, Sewing, Knitting and Drawing) (DOC), and Arts and Handwriting Test (AHT).

The FMSQ was administered on teachers to investigate fine motor developmental disorder and its prevalence among the school pupils. The questionnaire contained four parts. Part A contains the personal information of the respondent with five items, part B has the teacher-pupils ratio, part C is a four-point Likert scale model with twelve items designed to find out the existence of fine motor skills developmental coordination disorder while part D

of the questionnaire is a three-point projective rating scale with twelve items to find out the prevalence of fine motor skills in school-aged children. The DOC contained thirty items with four points Likert scale model. It was used to determine the availability of resources, infrastructure and learning aids for enhancing pupils' dexterity and fine motor coordination. The AHT has three sections of upper case letters, lower case letters and numbers. It was administered on the pupils to assess their performance in arts and handwriting. The face and content validity of the three instruments were ensured by two experts in Early Childhood Education and one expert in Fine Arts. The FMSQ, DOC and AHT were tested to establish their reliability which yielded a reliability coefficient of 0.76, 0.70 and 0.74 respectively. Data collected were analyzed using descriptive statistics of frequency, percentages, mean and ranking.

Results

Research Question One: What are the existing variants of fine motor skills developmental coordination disorder among school-aged children in Osun State?

Table 1: Existence of Fine Motor Skills Development Coordination Disorder

S/N	Items	Strongly Agree	Agree	Disagree	Strongly Disagree
1.	Illegible writing (despite appropriate time and attention given the task)	32(30.2)	26(24.5)	33(31.1)	15(14.2)
2.	Inconsistencies: mixtures of print and cursive, upper and lower case, irregular sizes, shapes, or slant letters	27(16.9)	26(24.5)	26(24.5)	106(25.5)
3.	Unfinished words or letters, omitted words	27(25.5)	32(30.2)	36(10.0)	11(10.4)
4.	Inconsistent position on page with respect to lines and margins	22(20.5)	31(30.2)	41(38.7)	12(11.3)
5.	Cramped fingers on writing tool	17(10.6)	36(22.5)	57(29.4)	6(5.7)
6.	Strange wrist, body or paper position	11(10.4)]	47(44.3)	36(34.0)	12(11.3)
7.	Talking to self while writing, or carefully watching the hand that is writing	37(34.9)	26(24.5)	28(26.4)	15(14.2)
8.	Poor organization on the page	21(19.8)	38(35.8)	26(24.5)	21(19.8)
9.	Inefficient speed in copying	10(9.4)	38(35.8)	43(40.6)	15(14.2)
10.	Slow or labored copying or writing-even if it is neat and legible	11(10.4)	378(34.9)	42(39.6)	16(15.1)
11.	Inattentiveness about details in writing	17(16.0)	26(16.3)	53(50.0)	10(9.4)
12.	Frequently needs verbal cues and sub-vocalizing	33(20.6)	15(14.2)	37(23.1)	21(13.1)

Note: Percentages are in Parenthesis

Findings on the existence of fine motor skills development coordination disorder as shown in Table 1 indicated as agreed and their percentages are illegible writing despite appropriate time and attention given the task was 54.7%, Inconsistencies: mixtures of print and cursive, upper and lower case, irregular sizes, shapes, or slant letters 41.4%, Unfinished words or

letters, omitted words was 55.7%, Inconsistent position on page with respect to lines and margins was 50.0%, Cramped fingers on writing tool was 33.1%, Strange wrist, body or paper position was 54.7%, Talking to self while writing, or carefully watching the hand that is writing was 59.4%, Poor organization on the page was 55.6%, Inefficient speed in copying was 45.2%, Slow or labored copying or writing-even if it is neat and legible was 45.3%, Inattentiveness about details in writing was 32.3% and Frequently needs verbal cues and sub-vocalizing was 34.8%.

Findings on the existence of fine motor skills development coordination disorder as shown in Table 1indicated as disagreed and their percentages are illegible writing despite appropriate time and attention given the task was 45.3%, Inconsistencies: mixtures of print and cursive, upper and lower case, irregular sizes, shapes, or slant letters 50.4%, Unfinished words or letters, omitted words was 20.4%, Inconsistent position on page with respect to lines and margins was 50.0%, Cramped fingers on writing tool was 35.1%, Strange wrist, body or paper position was 45.3%, Talking to self while writing, or carefully watching the hand that is writing was 40.6%, Poor organization on the page was 44.3%, Inefficient speed in copying was 54.8%, Slow or labored copying or writing-even if it is neat and legible was 54.7%, Inattentiveness about details in writing was 59.4% and Frequently needs verbal cues and sub-vocalization 36.2%.

Research Question Two: What are the prevailing variants of fine motor skills developmental coordination disorder among school-aged children in Osun State?

Table 2: Prevalence of Fine Motor Skills Developmental Coordination Disorder

Items	N	Min.	Max.	Mean	Rank
Generally illegible writing (despite appropriate time and attention given the task)	106	1.00	4.00	2.50	1st
Inconsistencies: mixtures of print and cursive, upper and lower case, irregular sizes, shapes, or slant letters	106	1.00	4.00	2.69	
Inefficient speed in copying	106	1.00	4.00	2.74	
Inconsistent position on page with respect to lines and margins	106	1.00	4.00	2.81	2nd
Slow or labored copying or writing-even if it is neat and legible	106	1.00	4.00	2.81	
Inattentiveness about details in writing	106	1.00	4.00	2.82	
Frequently needs verbal cues and sub-vocalizing	106	1.00	4.00	2.82	
Talking to self while writing, or carefully watching the hand that is writing	106	1.00	4.00	2.88	
Strange wrist, body or paper position	106	1.00	4.00	2.90	3rd
Cramped fingers on writing tool	106	1.00	4.00	2.94	
Unfinished words or letters, omitted words	106	1.00	4.00	2.95	
Poor organization on the page	106	1.00	4.00	2.97	
Valid N (list wise)	106				

The prevalent of fine motor skills developmental coordination disorders as shown in Table 2 were generally illegible writing (despite appropriate time and attention given the task) ($\bar{x}$=2.69); and inefficient speed in copying ($\bar{x}$=2.74). The relative prevalent fine motor skills developmental coordination disorders were; inconsistent position on page with respect to lines and margins (x=2.81); slow or laboured copying or writing-even if it is neat and legible

($\bar{x}$=2.81); inattentiveness about details in writing (x=2.82); talking to self while writing, or carefully watching the hand that is writing (x=2.88). The non-prevalent fine motor skills developmental coordination disorders were; strange wrist, body or paper position (x=2.90); cramped fingers on writing tool(x=2.94); unfinished words or letters, omitted words (x=2.95) and poor organization on the page (x=2.97).This shows that the prevalent fine motor skills developmental coordination disorders are generally illegible writing; inconsistencies: mixtures of print and cursive, upper and lower case, irregular sizes, shapes, or slant letters; and inefficient speed in copying.

Research Question Three: How qualitative is the classroom environment in schools within the study area?

Table 3: Available Physical Facilities and Instructional Materials for Teaching Pupils with Developmental Coordination Disorder showing the Quality of the Classroom Environment

	N	Min.	Max.	Mean
Available & Working (1st)				
Pencils	15	1.00	1.00	1.00
Eraser	15	1.00	1.00	1.00
Sharpner	15	1.00	1.00	1.00
Coloured pencils	15	1.00	2.00	1.06
Ruler	15	1.00	4.00	1.20
Threads	15	1.00	4.00	1.46
Scissors	15	1.00	4.00	1.46
Available & Not Working (2nd)				
Push pina	15	1.00	4.00	1.46
Tezt on handwriting	15	1.00	4.00	1.60
Drawing ink	15	1.00	4.00	1.66
Sketch book	15	1.00	4.00	1.66
Small scissors	15	1.00	4.00	1.73
Pins	15	1.00	4.00	1.73
Manual alphabet	15	1.00	4.00	1.80
Adjustable furniture	15	1.00	4.00	2.00
Abacus	15	1.00	4.00	2.06
Crochet hook	15	1.00	4.00	2.06
Drawing surfaces	15	1.00	4.00	2.06
Needles	15	1.00	4.00	2.06
Book stands	15	1.00	4.00	2.13
Building blocks	15	1.00	4.00	2.26
Storage or portfolio	15	1.00	4.00	2.33
Knitting needle gauge	15	1.00	4.00	2.40
Dilapidated (3rd)				
Sand trays	15	1.00	1.00	2.46
Stylus slate	15	1.00	1.00	2.53
Thick pencil holder	15	1.00	1.00	2.60
Audio chalkboard	15	1.00	2.00	2.66
Thimble and threader	15	1.00	4.00	2.80
Page turner	15	1.00	4.00	2.80
Magnetic board	15	1.00	4.00	2.86
Valid N (listwise)	15	1.00	4.00	2.93

Findings on the available physical facilities for teaching pupils with developmental coordination disorder showing the quality the classroom environmentin table 3 indicated that the available and working facilities were pencils ($\bar{x}$ =1.00), eraser ($\bar{x}$ =1.00), sharpener ($\bar{x}$=1.00), coloured pencils ($\bar{x}$=1.06), ruler ($\bar{x}$=1.20), threads ($\bar{x}$ =1.46) and scissors ($\bar{x}$=1.46). The available physical facilities but not working were push pins ($\bar{x}$=1.60), text on handwriting ($\bar{x}$=1.66), drawing ink ($\bar{x}$=1.66), sketch book ($\bar{x}$=1.73), small scissors ($\bar{x}$=1.73), pins ($\bar{x}$=1.80), manual alphabet ($\bar{x}$=1.20), adjustable furniture ($\bar{x}$=2.06), abacus ($\bar{x}$=2.06), crochet hook ($\bar{x}$=2.06), drawing surfaces ($\bar{x}$=2.06), needles ($\bar{x}$=2.13), book stands ($\bar{x}$=2.26), building blocks ($\bar{x}$=2.33), storage or portfolio ($\bar{x}$=2.40) and knitting needle gauge ($\bar{x}$=2.46). Findings on the dilapidated physical facilities for teaching pupils with developmental coordination disorder showing the quality the classroom environment were sand trays ($\bar{x}$=2.53), stylus slate ($\bar{x}$=2.60), thick pencil holder ($\bar{x}$=2.66), audio chalk board ($\bar{x}$=2.80), thimble and threader ($\bar{x}$=2.80), page turner ($\bar{x}$=2.86) and magnetic board ($\bar{x}$=2.93).

Discussion of Findings

Findings on the existence of fine motor skills development coordination disorder indicated that illegible writing (despite appropriate time and attention given the task) was prevalent, unfinished words or letters, omitted words were prevalent among pupils, and talking to self while writing, or carefully watching the hand that is writing was also prevalent. This may probably be because the classroom environment arenot well stimulating, furnished and accommodating in order to help children with dysgraphia learn effectively. This aligns with the study of Richard (2007) who asserted that teachers should be sensitive enough to note which part of the writing process are most difficult for the child because children with dysgraphia can exhibit high academic achievement in other subjects.

Findings also indicated that the prevalent fine motor skills developmental coordination disorders were generally illegible writing (despite appropriate time and attention given the task), inconsistencies: mixtures of print and cursive, upper and lower case, irregular sizes, shapes, or slant letters, and inefficient speed in copying. This aligns with the submissions of Wendelborg and Tossebro (2012) who re-emphasized that there are some co-occurring problems that can be linked to DCD. They are Attention Deficit HyperactivityDisorder (ADHD) which are speech and language disorder and visual motor deficit as revealed in the present study. Similarly, the study ofBruns, Martinez, Naudeau and Pereira (2010), and Hightower (2011), found that children in special schools must get enough attention from their teachers and other people around them. Faught Cairney, Hay, Veldhuizen, Missiuna, and Spironello (2008) additionally observed that teachers have significant participation in identifying children with varying degrees of clumsiness since they have the opportunity to observe children in a variety of environments and contexts.

Findings on the available physical facilities for teaching pupils with developmental coordination disorder showing the quality the classroom environment indicated that the available and working facilities are pencils, eraser, sharpener, coloured pencils, ruler, threads and scissors. For effective classroom environment and management, there is the need for professionalism as well as experience and other factors among teachers which is very germane to learning outcomes of learners (Okewole, Iluezi-Ogbedu& Osinowo 2013). Similarly, Vance and Boals (2011) asserted that when teachers are well saturated with the mastery of their content and are passionate to impact the learners, learning would be fun and interesting for them

Conclusion

Pupils were found to have prevalent existence of fine motor skills development coordination disorder indicated such as illegible writing (despite appropriate time and attention given the task), unfinished words or letters, omitted words were prevalent among pupils, and talking to self while writing, or carefully watching the hand that is writing.The study further concluded that the available physical facilities for teaching pupils with developmental coordination disorder to ensure the quality of the classroom environment are few though some are dilapidated and not working.

Recommendations

Based on the findings discussed above, the following recommendations are made;

i. Teachers can make the teaching more effective by making the classroom environment conducive, supportive and welcoming for children irrespective of their status.
ii. Schools should be equipped with facilities and equipment that are needed to boast learning outcome of pupils.
iii. Teachers should be exposed to ways of teaching children with fine motor skills developmental coordination disorder through conferences, seminars, symposium, and in-service training to the three strategies with special emphasis on cooperative strategy.

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DEVELOPMENT AND VALIDATION OF LEARNING ACTIVITIES FOR TEACHING MOTION IN PHYSICS, IBADAN, OYO-STATE, NIGERIA

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Abstract
The study investigated the development and validation of learning activities for teaching motion in Physics. The study adopted pretest posttest quasi experimental research design. The population for the study consisted of all Physics teachers in Ibadan North Local Government Area. Forty (40)SS I Physics students from their intact classes which were selected using purposive random sampling technique .Three hypotheses were tested at 0.05 level of significance and four research instruments were used for the study , titled Instructional Package of Learning Activities (IPLA) , Physics Achievement Test (PAT), Physics Students Interest Questionnaire (PSIQ) and Physics Student Attitude Questionnaire. Data collected were analyzed using Analysis of covariance (ANCOVA) . The results showed that the use of these learning activities had significant effect on students' achievement, attitude and interest in physics. It was recommended that physics teachers be equipped with skills of developing learning activities as the use of learning activities will make the learning of physics real, easy and interesting and that physics educators in secondary school should adopt these learning activities in teaching physics to improve students' achievement, attitude and interest in physics.

Keywords: Motion, Learning activities, Validation, Physics.

Introduction

The abstract nature of Physics has made the learning of the subject difficult and uninteresting to most learners. Teachers' consistent use of the conventional lecture methods in teaching the subject has added more challenges to the learning of the subject Juncker (2021) and this has been reported to be the major cause of poor performance in the subject (Ukoh, 2017). Teaching physics through only verbal communication and scrabbling few outlines on the board create misconceptions and encourage students to depend on memorizing concepts in physics to be able to pass examination without actual understanding of these concepts. This practice hinders the attainment of the goals and objectives of physics education which is to: provide basic literacy in physics for functional living in the society, acquire basic concepts and principles of physics as a preparation for future studies, acquire essential scientific skills and attitudes as a preparation for technological application of physics, stimulate and enhance creativity (NERDC, 2008)

The excuse most physics teachers give is that there is lack of instructional materials but preservice teachers learn skills of improvisation during their training. The reason they find it difficult to always think of materials to use is because the learning activities provided in most textbooks appear foreign to them. As a result of this, the present study developed learning activities to teach some aspects of motion based on common practices in the locality of the learners with locally made instructional materials for the activities. This is because the researchers believe in constructivist theory of learning where learners should be given opportunity to construct their learning by being involved in the learning process. Knowing

that learning is what the learner does Ukoh (2016), it follows that what the student does is more important in determining learning than what the teacher does. The teacher's task is to plan and make ready activities that will allow students to engage with the learning environment to learn the content, skills, attitude and values that he/she wants them to learn. The teacher is responsible for the planning, design and implementation of the activities.

Creating an inviting, interesting and engaging learning activities is very paramount because the quality of interactions during lessons determines the level and quality of learning that can take place. Learners learn and retain the knowledge more if they are involved actively during the lesson. This calls for teachers using activity based learning strategies to teach. More so, Physics which has been described as an abstract subject Ukoh (2017), complicated Seth, Fatin and Marlina (2007) and difficult to learn Olusola and Rotimi (2012) needs to be taught with instructional materials for the students to see the concepts to be learnt, experience the concepts by themselves and have real life experience of the concepts. This will make Physics real and easy to learn, remember and apply the knowledge to solve real life problems. Students learn better when the teacher explains, shows and gives the students the opportunity to demonstrate the concepts. It will guarantee that they know how to do it and give them the opportunities to apply the concepts in new situations (Ukoh, 2017). In the same line, Jarvis (2022) advised physics teachers that as they teach physics, that it is important to connect the abstract ideas to concrete and hands-on activities that students can learn from through the use of demonstrations or activities that convey the foundational concepts of physics in an accessible way to the students and it will also help increase students engagement and their interest.

Learning activities, as the name suggests, are activities designed or deployed by the teacher to bring about, or create the conditions for learning (Omotoso, 2021). The difference between the learning by design approach to employing various learning activities and other approaches to teaching relates to the pedagogical character or focal intent of the activities selected. What do I want to achieve with this activity? How will I achieve my aims? Which knowledge process is best suited to achieving my aim? With learning by design, the teacher mindfully designs or chooses particular learning activities based on which knowledge process is activated by that activity. Some learning activities stimulate experiential learning, others mobilize conceptual thinking, while still others prompt students to engage in analytical discussion. The pedagogical effectiveness of a learning element – a teacher's overall design – can be traced to; the mindful selection of learning activities based on the knowledge processes which those activities set in motion; the establishment of direct links between those activities and the intended knowledge objectives and the careful sequencing of those activities such that they build on, or contribute to, the learning of earlier or later activities.

A teacher who is mindfully engaged with considering and choosing learning activities based on the knowledge processes which those activities activate is thinking through the purpose of those activities and what kind of work she wants her students to be engaged in – what kind of thinking-acting-being. The knowledge processes provide a name for these different ways of working and for the pedagogical character-purpose that these different ways of working involve. This means the teacher can base her choice of learning activity on her pedagogical intent – she can therefore be more deliberate-purposeful in her design.

This study along these lines expects to create and validate learning exercises in some chosen motion topics in physics. Physics teachers throughout the years have created

distinctive learning activities to stimulate and support interest and to emphatically change the mentality of learners to physics. Adepitan (2003) investigated the utilization of companion coaching techniques to further develop students' execution in physics. Therefore this project will improve and sensitize the physics teachers on the importance of developing learning activities in teaching students.

Most physical phenomena cannot be directly observed, only their effects on things around us. For physics especially, most ideas are conveyed mathematically, which in itself is abstract. And, the conclusions we arrive at in physics are abstract summations of what is occurring. The reason abstract thinking is important to the study of physics is that it is nearly impossible to make discoveries in physics using conventional thinking. As such the abstract nature of physics to students had caused a massive failure of the students when been tested which makes the younger generation run away from physics.

To solve the problem of the abstract nature of physics there must be an introduction of an interesting way to teach the concepts of physics that will make the concepts real to the students and easy to relate what has been taught to their immediate environment (Omotoso, 2021). It also requires students to do meaningful learning activities and think about what they are doing Bonwell & Eison (1991) to create their knowledge. Karamustafaoglu (2009) submitted that the introduction of learning activities in teaching physics will enhance a better understanding of the subject as the students will be more seen in the activities of learning and teaching in class and that students' communication and problem-solving skills as well as to their critical-thinking ability are enhanced. Karamustafaoglu (2009) further asserted that classrooms where active learning techniques are used, that it is observed that the lessons become more interesting to the students and they take part in the lessons attentively. In addition, it is determined that the success and the interest of the students are highly improved in active learning group better than the traditional group. The Livingstone and Lynch (2002) study also found supportive data that the interest and learning of the students are effectively increased by the use of active learning techniques. Activity-based method of teaching is more effective than the traditional method as it brings about permanent learning (Karamustafaoglu, 2009).

Objectives of the Study

The objectives for this study were to:

1. develop learning activities for teaching motion
2. determine the effect of these learning activities on students' achievement in physics.

Hypotheses

1. There is no significant difference in the pre and post achievement scores of students taught with the learning activities.
2. There is no significant difference in the pre and post interest scores of students taught with the learning activities.
3. There is no significant difference in the pre and post attitude scores of students taught with the learning activities.

Methodology

This study adopted the pretest-posttest quasi-experimental research design and an intact class of 40 SSI physics students. Four research instruments were used for data collection and they are: Instructional Package of Learning Activities (IPLA), Physics

Achievement Test (PAT), Physics Students Interest Questionnaire (PSIQ) and Physics Students Attitude Questionnaire (PSAQ). PAT was a validated 36 item multiple choice questions drawn from SSI scheme of work by the researchers to test physics students' knowledge in motion. PSIQ consist of 13 items questionnaire on a four Likert scale Strongly Agree, Agree, Disagree and Strongly Disagree. It was developed by the researchers and it had section A for personal data of the respondents and section B had questions on students' interest in physics. The PSAQ also was developed by the researcher and it had 10 items on a four point Likert scale measuring the physics students' attitude to the subject. Before the commencement of the treatment, the pretest was administered to the students and Posttest was administered to the students at the end of the treatment to determine the extent of the effect of the development of the learning activities on students' attitudes, interest, and achievements in Physics in the following order: Physics Achievement Test (PAT), Physics Student Attitude Questionnaire (PSAQ) and Physics Student Interest Questionnaire (PSIQ). The data obtained were analyzed using Analysis of Covariance using the pretest score as covariate.

Results

The results in this study are presented following the order of the hypotheses and then discussion of findings.

H_o1: There is no significant difference in the pretest and posttest achievement scores of physics students learning with the learning activities.

Table 1: Summary of Analysis of Covariance (ANCOVA) showing the main effect of Treatment Learning Activities on Student's Achievement in Physics

Post Attitude Source	Type III Sum of Square	df	Mean Square	F	Sig.	Partial Eta Square
Corrected Model	1824.466[a]	16	114.654	2.739	.001	.190
Intercept	9570.803	1	9570.803	228.635	.000	.550
Students achievement	10.256	1	10.256	.245	.621	.001
Treatment	308.292	2	154.146	3.682	.027*	.038
Learning activities	70.861	2	35.430	.846	.431	.009
Students achievement	24.140	1	24.140	.577	.449	.003
Treatment * Learning activities	140.444	3	24.140	1.118	.343	.028
Treatment * students achievement	1.614	2	46.815	.019	.981	.000
Learning activities	69.083	2	.807	.825	.440	.009
* Students Achievement	48.083	3	34.267	.289	.761	.006
Treatment * Learning activities	48.801		41.861			
* Students achievement	7827.941	39				
Error	951463.000	41				
Total	9962.407	40				

a. R Squared = .190 (Adjusted R Squared = .121) * Denote significant difference at 0.05 level of significance

Table 1 revealed that the treatment had a significant main effect of the learning activities on students achievement in physics of 3.8% [$F_{(2,31)}$ = 3.682; p<0.05; 2=0.038]. Thus, hypothesis one was rejected; hence the treatment had a significant main effect on learning activities between the mean scores of pre-test and post-test of Students achievement. In order to understand the magnitude of the posttest achievement mean scores of different treatment groups, the estimated marginal means of the treatment groups was computed and the result is presented in Table 2

Table 2: The Estimated Marginal Means of Students achievement According to Treatment

			95% Confidence Interval	
Treatment	**Mean**	**Std. Error**	**Lower Bound**	**Upper Bound**
Learning activities	66.151[a]	1.791	62.617	69.685
Students achievement	71.418[a,b]	1.927	67.618	75.219

The estimated marginal means Table 2 shows that students exposed to learning activities had a highest posttest mean scores ($\bar{x}$= 66.151) and the least posttest students achievement mean score was obtained by the students exposed to learning activities.

H_o2: There is no significant difference in the pretest and posttest interest scores of physics students learning with the learning activities.

Table 3: Summary of Analysis of Covariance (ANCOVA) showing the main effect of Treatment Learning Activities on Students' interest in Physics

Post-Achievement Source	Type III Sum of Square	df	Mean Square	F	Sig.	Partial Eta Square
Corrected Model	2138.346[a]	16	133.647	33.889	.001	.744
Intercept	1645.695	1	1643.695	417.301	.000	.691
Students interest	2.339	1	2.339	.593	.442	.003
Treatment	347.504	2	173.752	44.058	.00*	.320
Learning activities	7.462	2	3.731	.946	.390	.010
Students interest	12.666	1	12.666	3/212	.075	.017
Treatment * Learning activities	22.953	3	7.651	1.940	.125	.030
Treatment * students activities	24.417	2	12.208	3.096	.048*	.032
Learning activities	30.339	2	15.169	3.847	.023*	.040
* Students interest	21.444	3	7.148	1.813	.146	.028
Treatment * Learning activities			3.944			
* Students interest	737.466	39				
Error	40508.438	41				
Total	2875.812	40				

a. R Squared = .744 (Adjusted R Squared = .722) * Denote significant difference at 0.05 level of significance.

Table 3 revealed that the treatment had a significant main effect on students interest with a large effect size of 32% ($F_{(2,31)}$ = 44.058; p<0.05; $\bar{x}$ 2 = 0.32). Thus, hypothesis two was rejected; hence the treatment had main effect of the learning activities on students' interest in

psychics. In order to understand the magnitude of the posttest students' interest mean scores of different treatment groups, estimated marginal means of the treatment groups was computed and the result is presented in Table 4.

Table 4: The Estimated Marginal Means of Students' Interest According to Treatment

			95% Confidence Interval	
Treatment	**Mean**	**Std. Error**	**Lower Bound**	**Upper Bound**
Learning activities	16.345[a]	.550	15.260	17.431
Students interest	14.003[a,b]	.591	12.836	15.169

The estimated marginal means in Table 4 shows that the students exposed to learning activities had the highest posttest mean score (16.345), followed by those exposed to the students interest (14.003). It also shows that the posttest mean score of the students exposed to the learning activities is significantly different from that of those in the other group.

Ho3: There is no significant difference in the pretest and posttest attitude scores of physics students learning with the learning activities.

Table 5: Summary of Analysis of Covariance (ANCOVA) showing the main effect of Treatment Learning Activities on Students' Attitude in Physics

Source	**Type III Sum of Square**	**df**	**Mean Square**	**F**	**Sig.**	**Partial Eta Square**
Corrected Model	3944.887[b]	16	246.555	5.655	.001	.326
Intercept	899.391	1	899.391	20.630	.000	.099
Students attitude	102.035	1	102.035	2.340	.128	.012
Treatment	437.167	2	218.583	5.014	.008*	.051
Learning activities	61.392	2	30.696	.704	.496	.007
Students attitude	81.302	1	81.302	1.865	.174	.010
Treatment * Learning activities	316.353	3	105.451	2.419	.068	.037
Treatment * students activities	17.045	2	8.523	.195	.823	.002
Learning activities	54.774	2	27.387	.628	.535	.007
* Students attitude	19.081	3	6.360	.146	.932	.002
Treatment * Learning activities * Students attitude			43.596			
Error	8152.447	39				
Total	113848.000	41				
Corrected Total	12097.333	40				

R Squared = .326 (Adjusted R Squared = .268) * Denote significant difference at 0.05 level of significance.

Table 5 reveals that the treatment had a significant main effect on the students' students attitude with an effect size of 5.1% ($F_{(2,31)} = 5.014$; $p<0.05$; x2 = 0.051). Thus, hypothesis three was rejected; hence, the treatment had a significant main effect on learning activities between the mean scores of pre-test and post-test of students' attitude. In order to understand the magnitude of the posttest students' attitude mean scores of different treatment groups, the estimated marginal means of treatment groups was computed and the result is presented in Table 6.

Table 1.6: The Estimated Marginal Means of Students' Attitude According to Treatment

			95% Confidence Interval	
Treatment	**Mean**	**Std. Error**	**Lower Bound**	**Upper Bound**
Learning activities	15.009[a]	.430	14.30	11.231
Students attitude	13.466[a,b]	.391	11.46	9.532

The estimated marginal means in Table 6 shows that the students exposed to learning activities had the highest posttest speech reading skill mean score (16.345), followed by those exposed to the students attitude (13.466). It also shows that the posttest mean score of the students exposed to the learning activities is significantly different from that of those in the other group.

Discussion of Findings

The treatment had a significant main effect on students achievement in physics. The reason being that the learning activities was designed to promote conceptual understanding through mind-on and hands-on activities which yield immediate feedback through discussions with peers and the teacher. Learning activities enhanced students' engagement and concentration during the lesson and made learning of the concepts easy. Learning with learning activities created a learner-friendly environment as learners were made to work on the activities as a team and coming to consensus on the answers as a team. Immediate feedback is given on the team test, allowing for the opportunity to write evidence-based appeals and valid arguments for incorrect responses. The findings of this study shows that learning activities produce both deep learning, deep understanding of concepts , sense of responsibility, genuine appreciation for team interaction, ethical decision making and improved work performance which is in congress with the findings of (MacCormack & Garvan, 2014). This submission is also supported by Raimi (2003); Ogunniran (2021) and Ukoh (2021).

The result also shows a significant main effect of learning activities on students' attitude to learning physics. This means that there was significant difference in the mean post attitude scores of the students in physics after using the learning activities which is in agreement with Ultay and Calik (2012) as students were very active during the lessons and were very willing to keep on learning. This is a reverse of the passive way students have been learning in most physics classes taught using the conventional lecture methods which is reported to be the major cause of the negative attitude students have towards learning physics Ukoh and Okeke (2017). The observed change in attitude as students engaged with the learning activities is in line with the findings of Visser (2007) and Adesina and Akinbobola (2005) who reported that attitude changes although gradually, that people constantly form new attitude and modify old ones when they are exposed to new information and experiences.

The treatment also had a significant main effect on students' interest with a large effect size of 32%. This was remarkable as during the lessons, students were so engrossed in the activities that they did not notice that time was going, that even after the period was over, and they still wanted to continue. This findings is in agreement the findings of Ogunniran who reported physics students' interest increased when they work with learning activities.

Conclusion

The following conclusions have been made based on the findings from the study. The students that constituted the population for this study reported strong self-belief that they can understand the physics better working with the learning activities. This indicates that they have faith in their abilities. Learning activities are found to have a significant effect on academic achievement, interest, and attitude of the physics students. The study provided information regarding interest and attitude of the sampled population. Results obtained from the study showed that there is a major difference between the relationship of the attitude and interest of the students and academic achievement. This is in contrast with many previous studies. Hence, the difference in the findings could be because of the different characteristics of the sampled population. It could also be that the conditions faced by the various samples are different due to environmental factors, government policy, and lots more. It could be concluded based on the findings that the learning activities strengthened students' achievement in physics and improved their attitude and interest towards physics. It also enhanced students' attention span and practical skills. Lastly, this study is part of the contribution of the researchers to the efforts made by other researchers and educators to shift the physics classroom practices from teacher-centered style to innovation constructivist-based strategies which are often learner-centered or otherwise called student-centered.

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A STUDY ON THE EXTENT OF ICT RESOURCES UTILIZATION IN LEARNING SENIOR SECONDARY SCHOOLS PHYSICS IN ILE-IFE, OSUN STATE, NIGERIA

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Abstract
This study investigates the extent of information and communication technology (ICT) tools utilized in learning senior secondary schools Physics in Ile-Ife, Osun State, Nigeria. It also determines the challenges facing utilization of computer-based instruction (CBI) to learn Physics in the study area. The population for the study comprised of all physics students in Ife East Local Government Area of Osun State. A sample of 150 students were selected using simple random sampling technique. The paper adopted descriptive research design to elicit data from 150 Physics students randomly selected from four public and private schools in Ile-Ife, using simple random sampling techniques. An instrument titled "the extent of computer-based instruction used for learning physics (ECBIULP)" was employed to elicit data from the respondents. The instrument was validated and the reliability coefficient obtained using Cronbach Alpha. The study reveals that majority of the students agree that their Physics teachers never use computer related device to teach them the subject. This implies that traditional way of teaching Physic is still in progress at the study area. The paper however identified three major challenges facing the use of computer related devices like CBI to learn physics. These are inconsistent power supply, poor maintenance of devices and teachers' inadequate skills to use CBI for students to learn Physics. The paper concluded that CBI is scantly available in the study schools and where available, thus, the ICT devices were scarcely utilized to learn physics in the study area. The paper therefore, suggests that adequate and appropriate ICT devices should be available in schools to learn senior secondary school Physics.

Keywords: Information and Communication Technology, CBI, Utilization, Learning Physics

Introduction

The use of computer related tools in learning physics is becoming indispensable since learners in schools are digital native. As such, deploying computer applications like Computer Based Instruction, Computer Aided Instruction, Mobile Learning among others are becoming essential ingredients for teaching and learning science subject like physics in Nigerian schools. Literature viewed Computer Based Instruction (CBI) is definedas the utilization of a computer related resources with the intention of "improving students' skills, knowledge, or academic performance" (Okolo, Bahr, & Rieth, 1993, p. 22). Young (2016) also defines CBI as the use of computer in instruction delivery. Similarly, Akter and Hossain (2013) defined CBI as an evolving way through which computer is being used in the teaching-learning process. Likewise, CBI is referred to as an instructional pattern, which utilized computer devices for educational materials delivery to learners. Based on these definitions, Jegede and Bakare (2009) posited that the contemporary involvement of

computer in pedagogical process comprises the use of computer based education (CBE), computer aided instruction (CAI), Computer Managed Instruction (CMI), Electronic Learning, Blended Learning and Mobile Learning. Cotton (2008) further noted that CBE and CBI are the broadest terms which refer to any kind of computer utilization in educational settings. This involves the use of computer to include; "drill and practice, tutorials, simulations, instructional management, supplementary exercises, programming, database development, writing using word processors, and other applications" (P. (Cotton, 2008, p. 515). It should be noted in this paper that CBI is considered to be the use of computers as the main source of instruction while CAI is the use of computer devices as a supplement to instruction (Moosavi, 2009). Based on the definitions above, CBI is defined in this study as the use of ICT related devices to facilitate teaching and learning.

It is observed that the current generation of students in our junior schools may possibly appreciate the use of computer in education simply because these learners are termed digital natives. These students are set of generations who are "native speakers" of digital language. Based on their nativity, they can use Internet, computers, video games (Prensky, 2001) and the likes with less or no assistance. These generations are believed to be typically more fluent in the utilization and discussion of information and communication technology (ICT) than earlier generation of people. This simply because they were born or raised in the digital era (Jha, 2020; Nicholas, 2020; Wood, Griffin, & Miranda, 2021). It is also believed that technology is an integral part of the students' life because they can adapt and adopt to any evolving technology. This means that the students could effortlessly utilize the new technologies within the shortest possible time (Kurt, Günüç, & Ersoy, 2013). It is therefore, imperative to know that the students in the twenty first century have learning preferences and styles which associate with ICT utilization different from majority of their teachers who by virtue of age are digital immigrants (Prensky, 2001). This then implies that students of this present era would be excited to learn and be taught in schools with their native language called digital.

Despite the advent of ICT integration into different fields of study, observation reveals that the conventional method of teaching and learning is still in operation to a greater extent in Nigerian schools. For instance, Danjuma (2018) posits that learning of Physics subject heavily depends on mathematics that makes it to be dreaded by many students in the secondary schools. As such, many students perceive that physics is abstract (Adebisi, 2022). This may possibly make the students lacked the familiarity with the learning contents of the subject which could cause them difficulties to construct knowledge (Adebisi, Akanbi, & Yusuf, 2020). Thus, all these complaints may be linked to the conventional method of teaching physics in secondary schools. Scholars (Omokorede & Siyelnen, 2021; Ugwuanyi & Okeke, 2020) have noted that, the use of conventional approach like lecture method couple with notes copying as well as solving exercises in textbooks/workbooks have been prevalent in the teaching and learning of physics subject in Nigerian schools. The use of these approaches mentioned and the traditional approaches for teaching physics might have contributed to students' perception that physics is a difficult and boring subject. In so doing, the students may not want to participate in any further in learning the subject. This argument therefore provides the bases for inclusion of activity driven method like integration of CBI into learning physics in the schools. On this note, this paper investigates the extent to which CBI is being utilized in the learning Senior Secondary Schools Physics in Ile-Ife, Osun State, Nigeria.

The study is guided by three research questions, namely:

- What extent is CBI used in learning Physics amongst the senior secondary schools' students in Ile-Ife?
- What are the challenges facing utilization of Computer Based Instruction (CBI) in learning Physics, from students' perspectives?

Utilization of Computer Based Instruction (CBI) for learning Physics

Research has revealed that Computer Based Instruction (CBI) method has been the adoption as a mode of learning Physics and other related science subjects in schools. For instance, Ruliah, Syahrial, and Muchtar (2019) study on the use of Tutorial Model as well as Drill and Practice Model of CBI in Indonesia Educational system reveal that, the use of CBI in teaching physics and other subjects is at average level. The authors further discovered that adequate guidance on the CBI applications should be provided to the students for their proper utilization. In addition, the integration of CBI or CAI into learning physics in Africa schools have proven to be very low due to some reasons. According to Atta (2015) there are no enough computers and educational software that can facilitate the use of CBI in Ghanian schools. This may probably be why teachers of all subjects do not use CBI as their teaching method. The author however revealed that students had positive attitude towards the use of CBI but they are only limited to using the traditional mode of instruction for learning physics subject due to the inadequacy of computer and other CBI resources.

In Nigeria, Usman and Madudili (2020) assessed the impact of CAI on teaching and learning and found that the use of CAI has powerful features that could positively improve the performance of teachers and learners in physics classes. The authors however identified some factors limiting the adoption and efficient use of CAI in Nigeria. Similarly, Danjuma (2018) findings on the effect of computer aided instruction, CAI on academic achievement among physics students of different abilities in Nigeria show that CAI enhances visualization and reorganization of science facts in the learner's cognitive structure. In addition, the application software does not discriminate between genders in academic achievement thus, CAI is gender friendly to the secondary schools' students. The findings however revealed that CAI is not incorporated into Nigeria education curriculum and therefore not in used in many secondary schools of Nigeria. Likewise, in a study by Onah et al. (2020) showed that CAI had a higher significant impact on students' achievement in Mathematics and Physics. The study portrays the interactive nature of CAI which activates the interest of the students and thus serve as a motivator to the students who participated in learning activities through the use of CAI. According to the authors, the use of CAI is a powerful tool that plays instructional roles like making learners feel more relaxed to learn and thereby may not really need the physical presence of the physics teacher in the classroom as claimed in Abimbade, Akinyemi, Bello, and Mohammed (2017).

Additionally, Ugwuanyi and Okeke (2020) asserted that not only secondary school curriculum needs the introduction of CBI resources but also the use of this method in the higher institution of learning will significantly impact university students' achievement in physics. When this happens, it may have positive impact on teaching at the secondary school level.

Other scholars like Eze, Ezenwafor, and Onwusa (2020); Nwoye and Okeke (2020) have found that the use of CBI for learning physics and other science subjects helps students to build their retentive and long-term memory. According to Nwoye and Okeke (2020), students taught using CBI were able to retain more than those taught using conventional

method of instruction. This happened because the used CBI and lessons consist of interesting animation display, visual imagery, motion pictures and tutorials which aided assimilation and recur where needed. It is thus believed that the effective use of CBI is the best instructional solution that can be used to curtail present and future academic shortcomings of the secondary school students learning science. Similarly, the study by Eze et al. (2020) on the effect of CBI on students' achievement and retention. The authors found that students taught using CBI achieved significantly higher grades and retained better than their counterpart taught using conventional method. Thus, the study concluded that CBI positively affects students' cognitive achievement and retention ability of high and low achievers in the subject taught. However, Abimbade et al. (2017), study in southwest Nigeria on the effect of individualized Computer Based Instruction on students' academic achievement in organic chemistry found that that the individualized adoption of CBI in the learning of chemistry and other science subjects does not significantly improved students' achievement like the conventional method. This is might be due to the fact that the students who were taught Organic Chemistry using the conventional teaching strategy took advantage of the presence of their teacher. As such, the learners could clarify concepts which were not clear to them from the teacher unlike the students taught using the Individualized Computer-based Instruction which could only replay what the media teacher has said.This finding of Abimbade et al. (2017) may be considered as a challenge to deployment of CBI not blended with face to face for learning in school.

Challenges of using ICT tools for teaching and learning in Nigeria

The literature reviewed in this paper reveal catalogues of challenges confronting learning and teaching with computer related devices in Nigeria. Some of these challenges include: lack of genuine software, inadequate computer devices in the classroom, low-speed internet, lack of ICT literacy training, availability of obsolete ICT equipment, lack of technical support experts, as well as poor administrative support (Fahm et al., 2022). Similarly in a study conducted by Bukar, Bello, and Ibi (2016) in the North East of Nigeria identified six key barriers to the deployment of CBI to learning in schools. The challenges include; inadequate personnel, lack of electricity- instability in power supply, financial problems, poor management as well as computer phobia. Furthermore, (Usman & Madudili, 2020) identified inadequate funding of the education sector, poor maintenance culture and the lack of a constant supply of electrical power as limiting factors to the adoption and efficient use of CBI in Nigeria. The authors therefore recommend the need for adequate funding of the education sector, and proper training of staff on the application of CBI.

Models for ICT Utilization in Teaching and Learning

The integration of ICT in teaching and learning could be explained with the adoption of models or theories like theory of reasoned action (TRA) (Fisbein & Ajzen, 1975), theory of planned behaviour (TPB) (Ajzen, 1991), Technology acceptance model (TAM) (Davis, 1989; Davis, Bagozzi, & Warshaw, 1989), and unified theory of acceptance and use of technology (UTAUT) (Venkatesh, Morris, Davis, & Davis, 2003) among others. All of these theories are suitable for the interpretation of data and findings of this paper. However, TAM is used in this study.

TAM extends TRA and TPB by adding two other constructs, perceived ease of use (PEOU) and perceived usefulness (PU) (Davis et al., 1989). These authors, further explain that PEOU is the extent to which a person believes that using ICT tool like CBI would be easy

while PU is regarded as the degree to which users believe that the system will help them to learn or solve a problem say in Physics (ibid).

Methodology

The paper adopted descriptive research design to elicit data from 150 Physics students randomly selected from four public and private secondary schools in Ife. A self-designed instrument titled "Extent of Computer-based Instruction Used for Learning Physics (ECBIULP)" was employed to gather data from the respondents. The structured questionnaire consisted of four main sections namely: the personal data of respondents; the extent to which CBI is used in the learning of physics, the extent of students' access to computer for the purpose of learning physics and the challenges faced in using CBI for learning physics. The instrument was validated and the reliability coefficient obtained using Cronbach Alpha. The instrument was administered to the students after obtaining the permission of both the school authorities as well as the learners. The data obtained were analysed using descriptive statistics with the aid of simple percentages, and bar charts.

Results and Discussion of Findings

What extent is CBI used in learning of Physics among senior secondary schools in Ile-Ife?

In order to answer this research question, data collected on the extent CBI is used in learning

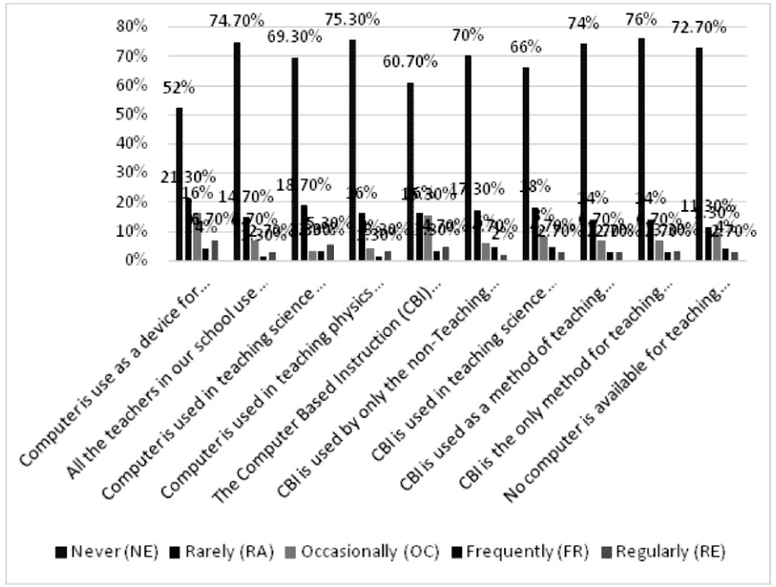

Figure 1: The Extent of students' Use of CBI in Learning Physics

From Figure 1, the result showed that 78(52%) of the respondents agreed that computer has never been used as a device for teaching Physics in schools within the study area, 112(74.7%) of the respondents agreed that all the teachers present in their school do not use computer as a device for teaching physics in the school and 113(75.3%) agreed that computer has never been used in teaching physics in their schools. The results further

revealed that 111(74%) of the respondents agreed that CBI has never been used as a method of teaching physics in their schools; 114(76%) of the respondents agreed that CBI is not the only method for teaching physics in their schools and 109(72.7%) of the respondents agreed that computer is available for learning physics in their schools. Despite the availability of some of the ICT resources in the selected schools for this study, it can be concluded that CBI were never introduced as a method for learning physics. This means that traditional method of teaching Physic is still being upheld in the study area.This might possibly be due to the inadequate ICT facilities and literacy of the teachers to deploy CBI in the schools. This implies that the intension to use CBI to teach physics is limited by factors like ICT literacy as well as ICT facilities. The two identified factors and others in this study appeared to have hindered the teachers' perceived ease of use (PEOU) of CBI in teaching the students in Nigerian classroom. According to TAM, PEOU is a function of users' intension to use ICT tool (Davis, 1989). In Nigeria context, the findings of this study is in congruent with that of Nwokoye, Oyim, Dimnwobi, and Ekesiobi (2019) who concluded that availability ICT resources, access to the ICT infrastructure and ease of use the determinants of device preference. However, the finding of this study is in contrast with that of Nwoye and Okeke (2020) who found that students were taught using CBI to construct learning with interesting animation display, visual imagery, motion pictures and tutorials to aid assimilation of students. The findings of this study found that the few available ICT resources in some of the schools were unused. This is in congruent with the finding of Danjuma (2018) who that CAI is not incorporated into Nigeria education curriculum and therefore not in used in many secondary schools of Nigeria.

What challenges faced in using CBI for learning Physics from students' perspectives?

The data collected on the challenges face in using CBI for learning Physics from students' perspectives were subjected to descriptive analysis and the results were shown in Figure 2.

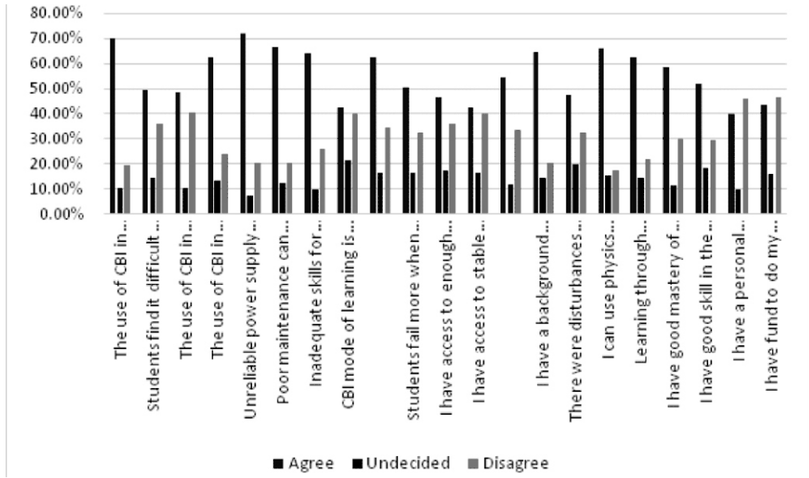

Figure 2: Frequency Distribution of the Challenges Facing Utilization of CBI for Learning Physics (N=150)

From Figure 2, the results showed the descriptive analysis of the challenges faced in using CBI for learning Physics from students' perspectives. The results show that 105(70%) of the respondent agreed that the use of CBI in teaching physics has some challenges; 74(49.4%) agreed to the notion that students find it difficult to understand physics concept when taught with CBI and 73(68.7%) confirmed that the use of CBI in learning physics is time-consuming. 94(62.7%) respondents agreed that the use of CBI in learning physics is expensive; 108(72%) respondents agreed that the inconsistent power supply of this country is one of the major challenges faced when using CBI in learning physics; 100(66.7%) also agreed that poor maintenance of the concerned instruments or equipment can be a challenge for using CBI in learning Physics while 96(64%) of the respondents agreed that low level of technical know-how (inadequate skills) for operating CBI to learn Physics can be a challenge. 54(36%) of the respondents agreed that the use of CBI as the mode of learning is boring and uninteresting; 94(62.7%) of the respondents agreed that there are many distractions attached to CBI in learning physics and 76(50.6%) respondents agree that students fail more when CBI is used as a method of teaching physics in secondary schools.

The results further indicated that average number 70(46.7%) of students have access to enough data to stay online and study physics at all times; 82(54.6%) affirmed that they do not have a good phone to enable them learn physics through CBI. And a number of 97(64.6%) of the respondents concur that they have a background knowledge of how to use technological devices (phones, computers, TV, Radio, etc.) to learn physics. Also, less than an average number of 71(47.4%) of the respondents agreed that the major distractions whenever they are learning physics on their devices at home were from the parents, siblings or friends.

In the concluding part of the result in the Figure 2above, the total number of 99(66%) of the respondents chose that they can use physics applications to solve problems; 94(62.6%) of the respondents affirmed that learning through computer applications make them study physics better and approximately average number of 78(58.6%) of the respondents agreed that they have good skill in the use of ICT facilities. Finally, 61(40.6%) of the respondents agreed that they have all the fund needed to maintain learning Physics online always. From the results, it can then be concluded that the major challenges faced while using CBI in learning physics are; inconsistent power supply of this country, poor maintenance of computer and other devices, and inadequate skills to operate CBI for learning Physics. Also, the result showed that the use of CBI in learning physics is expensive and this can also be a challenge to learning effective using this method. Similar challenges were identified in the study by Fahm et al. (2022). The authors pointed out lack of genuine software, inadequate computer devices in the classroom, low-speed internet, lack of ICT literacy training, availability of obsolete ICT equipment, lack of technical support experts, as well as poor administrative support. Likewise, the findings of this study support that by Bukar et al. (2016) as well as Usman and Madudili (2020) who listed challenges limiting use of CBI in schools.

Conclusion

This study concludes that CBI is scantly available in the study schools and where available, the ICT devices were scarcely utilized to learn physics in the classroom. This implies that traditional way of teaching Physic is still in being practiced amongst Physics teachers in the study area. In addition, the teachers and learners' perceived ease of use (PEOU) of CBI in teaching and learning in Nigerian classrooms were hampered by barriers like inconsistent power supply, poor maintenance of computer and other devices, and inadequate ICT skills to utilize CBI for learning Physics.

Recommendations

The following recommendations were made based on the findings of this study:

1. There is an immediate need for the ministry of education and other educational regulating bodies to organize seminars, workshops and conferences to sensitize Physics teachers on how to use of CBI in teaching and learning process.
2. All education stakeholders should collaborate to ensure that there is a provision of constant supply of electricity especially during the school hours in order to make the use of CBI in learning Physics possible without interruption.
3. The school management should always allow students to have access to the computer facilities under maximum monitoring in order to learn physics through the use of CBI.
4. Ministry of Education should setup a programme for all senior secondary schools all over the country to encourage the students to make use of CBI for personnel learning of physics as this will enhance their knowledge massively.

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IMPACT OF INDIVIDUAL METHOD IN USING ARTS AND CRAFT A THERAPEUTIC INTERVENTION FOR SELECTED HANDICAPPED STUDENTS IN FEDERAL COLLEGE OF EDUCATION (SPECIAL), OYO, OYO STATE, NIGERIA

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Abstract
The study investigated the impact of individual method of using Arts and Craft as therapeutic intervention for handicapped students in Federal College of Education (Special), Oyo, Oyo-State, Nigeria. Observation and single group experimental research design were adopted for the study which focus on forty (40) handicapped each from five (5) different area of special disabilities with twenty non-handicapped students to make it total number of forty (40) respondent for pre-test and post-test. Purposive sampling was used to arrive at FCE (Special), Oyo. Since is the only College for special education in Nigeria. The reliability of instrument was established by using test and retest method. Simple percentages were used to test the demographic of data and nature of disabilities in student. T-test was employed to find out the difference in performance of the handicapped student before and after the use of individual approach method. The finding of the study showed the effect of academic performance of handicapped student and their nature of disabilities determine the effectiveness of handicapped in Arts and Crafts. Findings showed that student with speech impairment perfume higher, those with physical impairment has an average mean while those in mental retardation perform lower than the rest.

Keywords: Art, Handicapped Student, Therapy, Individual method

Introduction

Art has always been an effective form of expression, whether in a visual or Non-visual form. It has all what it takes to change live and often in profound ways allowing us to communicate through a completely different channel, when words are not enough to change specific disorder in children. Images and symbols are also utilized to create some change in the world that is true representation of us and tell stories. Arts and crafts are one of the therapeutic ways of reforming handicapped students (Aremu, 2000). Craft is the product of Art that although requires less training of intellectual potential, examples of these are bead work, weaving, leather, design, basket weaving, mosaic, collage and carving which can be easy practice consciously or unconsciously even through the adult member of a particular community but can later develop in an organized environment, example of such artists is Lamidi Fakeye.

Ogunniyi (2010) identified craft to the skillful ways of making things with hands and brain, the items are made to function, it could be a small items like jewelries or as big as

aircraft. Furthermore, he pointed out that craft requires special skill which someone who is called an apprentice would have to learn and master, this skill is passed on from one generation to the other, craft are mostly three dimensional in nature.

Uche (2015) equally opined that art can be seen as a language of expression, communication and self-exploration of creative potentials and of creation from instincts, equally art is means of documenting the segments of the past, present and future. Its requires high level of expertise interms of forms and styles. Therefore, it reflects a child ability to recall reform and convey the past. It equally documents aspect of present conditions and it lends itself to expression of things to come (Okunola, 2003).

Arts in this context refer to all created forms and expressions ranging from the visual (Fine and Applied Arts), literary and performance oriented expressions such as music, dance, movement and mime. The content in the research encompasses all activities that require the application of the creative imagination to impose aesthetic values on form (Odewale, 2006).

Arts whether fine or applied, literary or performance-oriented is fundamental to every human endeavour as they excite and stimulate the imagination and creative force. Consequently, the technician or artisan, the scientist or technologist require some imaginative and creative skill in order to function at an appreciably acceptable level of performance (Oladimeji 2006). Arts and crafts do not exist in a vacuum. They need basic ingredients of ideas to function ideas could be derived from practical or vicarious experiences. These ideas has to do with all forms of creative therapy that will explore some specific aspect of art in expression

Adeniyi (2009) expressed the same essence that children grow socially and intellectually through art experiences and activities, apart from presenting the opportunity for physical growth and visual discrimination, it also assist the child to be equally creative. The above assertion means that all forms of arts function multidimentionally. This is supported by (Leibmann, 1986) that Art therapy uses art as a means of personal expression to communicate feelings. rather than aiming at aesthetically pleasing end products to be judged by external standards. (VanMeter, 1987) reteriated that art therapy is the prescriptive use of art materials and art directives to facilitate positive changes in a person's thoughts, feelings and behaviours. The Foregomas reveals that this means of expression is useful and can be done by everyone, not just the artistically gifted.

Therefore, these study specifically focus on therapeutic intervention through Arts and Craft that will distinguish handicapped student's creativities performance to meet the equal or above standard to that of Non-handicapped student as well as the healing procedure for any deficiency noticed in them.

Statement of the Problem

There are many children in schools right from primary, secondary with different challenging condition which negatively affect them to pursue their carriers effectively like others These disabilities made many to pursue course that is against the creativities tendencies noticed in them.

Although, there are many physical challenge in schools and out of school in the streets begging for sympathy by the virtue of their disability. Yet a sizeable number of them have proven that disability is not inability. Some excelled in some chosen vocational and creative careers. If nature had endowed them with instincts, talents, knowledge as it does the able bodied would exposing them to creative abilities and task according to their ability be an added value and further remedify their predicament.

Purpose of the Study

The major goal of this research work is to find out how Art and Craft can be used as a therapeutic intervention for handicapped students in Federal College of Education (Special) Oyo. Specifically the study seek to:

1. determine nature of disability noticed on the students
2. assess the conventional approach used by lecturer in training the handicapped students
3. determine the academic performance of the handicapped students in Arts and Craft using the conventional approach
4. determine the academic performance of the handicapped students in Arts and Craft using the conventional approach
5. examine the interaction effect between nature of disability and academic performance of handicapped students

Research Questions

The following research questions guided the study.

1. What is the nature of physical challenges noticed in each of the students?
2. What is the conventional approach used by lecturers in training the handicapped students?
3. What is the performance of the handicapped students using the conventional approach?
4. What is the performance of the handicapped students using the isolating approach method?
5. What are the interaction effect between nature of disability and academic performance of handicapped students?

Hypotheses

1. There will be no significance difference in the academic performance of handicapped students and those without disability in Visual Art using conventional teaching method.
2. There will be no significance improvement in the academic performance of handicapped students using isolating method of teaching in Federal College of Education (Special), Oyo
3. There will be no significance relationship between nature of disability and academic performance of handicapped students in Federal College of Education (Special) Oyo.

Methodology

Observation and single-group experimental research design were adopted in this study. The observational research involves watching over the situation or phenomena and obtaining first-hand information relating to particular aspect of main subject. The method is adopted because it in a suitable and efficient way of describing human behaviour way in its nature. The single-group experimental research design involves observation of a group. The pre-treatment observation indicates the level of performance of status of the group without the influence of the treatment. The post-treatment observation indicates the effect of the treatment on the group. The target population for this study is the handicapped students at the

centre for Rehabilitation School of Special Education, Federal College of Education (Special) Oyo, Oyo State. Purposive sampling was used to arrive at F.C.E (Special), Oyo because it is the only Higher Institution for Special Education Five special area were selected from the school of special education, while 10 respondent were taken from each special area. The special area randomly selected include, (1) visual impaired (VI) (2) Mental retardation (MR) (3) Speech Impaired (SI) (4) Hearing impaired (HI) (5) Physically Impaired (PI) with 20 non handicapped to make it total number of 70 participants. The participants age ranges from 16 to 40 years. The participant of this study involves Fifty handicapped students from selected area of special disabilities and twenty non handicapped students with total number of seventy participants. This research that focused on therapeutic intervention on handicapped student would not be effective without the aid of intervention specialist and paraprofessionals who recognize and assist in interpreting the student behaviour, languages and performance so as to develop appropriate goals and objectives. They are Bralist, Audiologist, Sign interprets physiologist physical, Nurse, Social worker etc. They assisted this study through their inputs and opinions about the projects and the students performance. Most importantly the handicapped students were the heart of this study, they were affected by various level of severe to profound disabilities .

The researcher made use of Observational technique and tests. The observational technique was and to find out the nature of the disabilities in the students. The tests were used to find out the performance of the students before and after the use of the stimulus on the handicapped students. Test items were developed from drawing, painting, weaving and music which are areas in arts and craft. Five questions were raised from each of these areas totaling 20 questions in all. Having received a due permission from the Dean, School of Special Education through the Director of the Rehabilitation Centre, Federal College of Education (Special), Oyo, the researcher was supported by two instructors from the Department of Fine and Applied Art Other concerned lecturers from the school of Special Education volunteered to assist the researcher while examining the Handicapped Students with their creativities tendency administration of the test. The direct observation techniques focused on the handicapped students directly within the premises of the Rehabilitative Centre of School of Special Education, Federal College of Education (Special) Oyo. The test items were given to the director of rehabilitation centre and other experts in test and measurement. Test and retest method was used to find the reliability at 0.05 significance. The data obtained were analyzed with the use of statistical tools. Simple percentage were used to and use the demographic data of the respondents as well as the nature of the disabilities in the des T-test was employed to find out the difference in the performance of the handicapped s before and after the use of the isolating approach method

Results

This study examined Arts and Craft as a Therapeutic intervention for selected Handicapped students in Federal College of Education (Special) Oyo. This section is sub-divided under the following headings:

i. Data Presentation
ii. Hypothesis Testing
iii. Discussion of Findings

Table 1 Socio-demographic Characteristics of the Respondents

Age range	15-20yrs	21-25yrs	26-30yrs	31-35yrs	36-40yrs
	9(12.9%)	15(21.4%)	21(30%)	13(18.6%)	12(7.1%)
Gender	Male	Female			
	48(68.6%)	22(31.4%)			
Disability	Disabled	Non-Disability			
	50(71.4%)	20(28.6%)			
Causes of	At Birth	Toxics	Accident	Malnutrition	
Disability	29(58%)	5(10%)	14(28.76)	2(%)	14(28.76)
	Mental	Visual	Hearing	Physical	Speech
Nature of	Retardation	Impairment	impairment	Impairment	impairment
Disability	7(14%)	8(16%)	(16(32%)	8(16%)	11(22%)

Source Field: Federal College of Education (Special), Oyo State

Table 1 represent the socio-demographic characteristics of the respondents. Results from the table shows the study was dominated by students within the ages 26-30years with a percentage of 30%, meanwhile the study was dominated by the male gender with a percentage of 68.6%. A total of 50 students' constituting a percentage of 71.4% were handicapped while 31.4% of the students has no symptom of disability. The study showed that 58% of the respondents were handicapped from birth, 28% of them were due to accident, 5% of the disability resulted from toxic substances and the remaining 2% were due to malnutrition. This study showed variations in de students' disability with 32% having hearing impairment, equal percentage (16%) of students has visual and physical impairment respectively, and 22% of the disabled has speech impairment and 14% of them suffered from mental retardation.

Test of Hypothesis

Hypothesis one stats that "there will be no significance difference in the academic performance of handicapped students and those without disability in Visual Art using conventional teaching method".

Table 2: Descriptive Statistics of Conventional Method of Teaching on Academic Performance of Visual Arts Students in Federal College of Education (Special) Oyo

Group		Conventional Method Teaching	
	N	Mean	Std. D
Disabled	50	3.06	2.48
Non-Disabled	20	11.9	2.25
Total	**70**	**7.48**	**2.365**

Source Field: Federal College of Education (Special), Oyo State

The descriptive statistics of conventional method of teaching on academic performance of visual arts students in Federal college of education (Special) Oyo is as presented in table 2. The table revealed that the mean score of students without disability (11.9) when conventional method of teaching was adopted by their lecturer was higher when compared

with students with disability (3.06). To further investigate the degree of differences in the performance of both the handicapped students and students without disability when using conventional method of teaching ANCOVA analysis was conducted and the result is as presented in the statistical table 3

Table 3: ANCOVA Test of Conventional Teaching Method on academic performance of handicapped students in Federal College of Education (Special) Oyo

Source	Sum of Squares	df	Mean Square	F	Sig
Corrected Model	2.170[a]	1	2.170	0.417	0.527
Covariate (Pre-test)	1446.185	1	1446.185	278.022	0.000
Conventional Method of Teaching	2.170	1	2.170	0.417	0.527
Error	93.630	48	5.202		
Total	**2928.000**	**50**			

Source Field: Federal College of Education (Special), Oyo State

The results of the ANCOVA analysis is as shown in table 3. The table showed that for the handicapped students, the F- critical obtained was 40426. Given 1 and 48 as the degree of freedom measured at 0.05 level of significance, this is higher than the F-Value 0.417. It therefore shows that there is a significant difference in the academic performance of students without disability relative to the handicapped students when the conventional teaching method was adopted by the instructors. An inspection of the means when the conventional approach was used indicates that students without disability has better scores in visual art relative to those with disability. It therefore concluded that conventional teaching method has a negative impact on the academic performance of the handicapped students.

Hypothesis two states that there will be no significance improvement in the academic performance of handicapped students using isolating method of teaching in Federal College of Education (Special) Oyo.

Table 4: Descriptive statistics of isolated method of teaching on academic performance of visual arts students in Federal college of education (Special) Oyo.

Group		Conventional Method Teaching	
	N	Mean	Std. D
Disabled	50	8.14	5.58
Non-Disabled	20	14.85	1.31
Total	**70**	**11.495**	**3.445**

Source Field: Federal College of Education (Special), Oyo State

The descriptive statistics of isolated method of teaching on academic performance of visual arts students in Federal college of education (Special) Oyo is as presented in table 4. The study showed an improvement in the academic performance of disabled students when using the isolated method of teaching with a mean value of 8.14. In the same trend the study

revealed a slight increase in the mean score of students without disability when isolated method was equally used by their instructors relative to when conventional approach was adopted with a mean difference. To investigate the degree of differences in the academic performance of the handicapped using isolated method of teaching, ANCOVA analysis was conducted and the result is as presented in the statistical table 5.

Table 5: ANCOVA Test of Isolated Method of Teaching an academic performance of handicapped students in Federal College of Education (Special) Oyo

Source	Sum of Squares	df	Mean Square	F	Sig
Corrected Model	22.479[a]	1	22.479	0.670	0.424
Covariate (Pre-test)	52.843	1	52.843	1.575	0.226
Isolated teaching Method	22.479	1	22.479	0.670	0.424
Error	604.071	46	33.559		
Total	**1511.000**	**50**			

Source Field: Federal College of Education (Special). Oyo State

Outcome of the ANCOVA analysis is as shown in table 5. The table showed that for the handicapped students, the F- critical obtained was 4.0517. Given 1 and 46 as the degree of freedom measured at 0.05 level of significance, this is higher than the F-Value 0.670. It therefore shows an improvement in the academic performance of the handicapped students without relative to when the conventional teaching method was adopted by the instructors. It therefore concluded that there is a significance improvement in the academic performance of handicapped students using isolating method of teaching in Federal College of Education (Special) Oyo.

Hypothesis three states that "there will be no significance relationship between nature of disability and academic performance of handicapped students in Federal College of Education (Special) Oyo.

Table 6: Descriptive statistics of variation in academic performance based on their nature of disability in in Federal college of education (Special) Oyo

	Mental Retardation	Visual Impairment	Hearing Impairment	Physical Impairment	Speech Impairment
Mean	2.34	6.02	3.16	8.29	11.03
Std. Dev.	0.482	0.627	0.633	0.494	0.381
N	9	15	12	6	8

Source Field: Federal College of Education (Special), Oyo State

Outcome of the academic performance of handicapped students with respect to their nature of disability in Federal College of Education (Special) Oyo is as represented in the statistical table 6. The study shows that students with speech impairment performed better compared to other group of students with an average mean of (11.03), those with physical impairment has

an average mean of (8.29) meanwhile students with mental retardation has the least mean value of (2.34).

Discussion of Findings

This study explored Arts and Craft as a Therapeutic intervention for selected Handicapped students in Federal College of Education (Special) Oyo. A total of seventy (70) students which comprise fifty (50) handicapped students and twenty (20) students without disability were used for the study. Outcome of my research studies showed the study was dominated by students within the ages of 26-30years with a percentage of 30%, students within the ages 15-20years however, constituted the least group with a percentage of 12.9%, findings from this study shows that majority of the participants were male with a percentage of 68.6%, meanwhile larger percentage of the students were disabled with a percentage of 71.4% while the remaining 28.6% were students without disability. Causes of the disability the handicapped students ranges from birth (58%), toxics (10%), accidents (28%) and malnutrition (4%). This study revealed that out of a total fifty handicapped students used for this study, 14% suffered from mental retardation, 16% has a challenge with visual impairment, 32% suffered from hearing impairment, 16% of the disabled students suffered from physical deformity and the remaining 22% of the handicapped students suffered from speech impairment problems.

Based on the interviewed carried out by the researcher. Findings shows that both the handicapped students and students without disability are being taught under the same conditions meanwhile there was no special attention given to the handicapped students in terms of motivation. This however, prevented the handicapped students from learning at the same pace with students without disability. Lecture method of teaching was observed to be employed by the instructors and no translation was done so as to aid the teaching and learning process of the handicapped students.

Findings from the study revealed that the mean score of students without disability (11.9) when conventional method of teaching was adopted by their lecturer was higher when compared with students with disability (3.06). Results from the ANCOVA analysis showed that for the handicapped students, the F- critical obtained was 4.0426. Given 1 and 48 as the degree of freedom measured at 0.05 level of significance, this is higher than the F-Value 0:417 It therefore shows that there is a significant difference in the academic performance of students without disability relative to the handicapped students when the conventional teaching method was adopted by the instructors. It therefore concluded that conventional teaching method has a negative impact on the academic performance of the handicapped students.

The descriptive statistics of isolated method of teaching on academic performance of handicapped students Arts and Crafts in Federal college of education (Special) Oyo showed an improvement in the academic performance of disabled students with a mean value of 8.14 relative to the conventional approach having a mean of less than four (<4). In the same trend the study revealed a slight increase in the mean score of students without disability when isolated method was equally used by their instructors relative to when conventional approach was adopted with a mean difference. Outcome of the ANCOVA analysis revealed that for the handicapped students, the F- critical obtained was 4.0517. Given I and 46 as the degree of freedom measured at 0.05 level of significance, this is higher than the F-Value 0.670. This however, suggest that the academic achievement of the handicapped students will greatly improve when using the isolating method compared to the

conventional teaching method in Federal College of Education (Special) Oyo.

The interactive effect of academic performance of handicapped students and their nature of disabilities shows that disability play a major role in determining the effectiveness of handicapped students in Arts and Crafts. Findings from my studies showed that students with speech impairment performed better compared to other group of students with an average mean of (11.03), those with physical impairment has an average mean of (8.29) meanwhile students with mental retardation has the least mean value of (2.34).

Conclusion

The research objective is to examine Arts and Craft as a therapeutic intervention for handicapped students, and then develop an art therapy treatment plan for this population. Results from this study support isolating teaching method for the handicapped students both in Federal College of Education (Special) Oyo and Nigeria at large. The researcher found this method to be beneficial to the handicapped students as it enhances their academic achievement in Arts and Crafts.

Recommendations

The study critically look into the effectiveness of Arts and Craft as a Therapeutic Intervention for Handicapped Students in Federal College of Education (Special) Oyo and other society in Nigeria There are many physical and mental challenges in school and within a particular community begging for livelihood and impose sympathy on them by the virtue of their disability.

The research clearly point out that, disabilities is not inabilities, its only required to identify the simple approach to be used in impacting knowledge to the handicapped, most especially the isolating method used in this study to train the trainer not only in federal college of Education (Special) Oyo but to other colleges of Education and all higher institution of learning up till university in order to apply it to the lower level of Education with ease.

The researcher found this method to be highly relevant in impacting skill to the handicapped student, therefore recommend that the government, curriculum planner and other stakeholder in Nigeria system of Education to create a unit in all schools, centre for Rehabilitation for the handicapped to receive training and the certificate to be awarded should be differ to normal students because of the mental ability in order to reduce the rate of beggars in our street and to provide for self-reliance.

Moreover, further research should spring forth to assess the application and effectiveness of isolating method as a therapeutic intervention for handicapped student right from lower basic level of Education to Senior Secondary School.

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EFFECTS OF NUMBERED-HEADS-TOGETHER AND HEURISTIC METHODS ON THE PUPILS' ACADEMIC PERFORMANCE IN SOCIAL STUDIES IN ILORIN EAST LOCAL GOVERNMENT AREA OF KWARA STATE, NIGERIA.

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Abstract
The study examined the effects of Numbered-Head-together and Heuristic Method on pupils' Academic performance in Social Studies. The research design adopted for this study is the pre-test, post-test, control group quasi-experimental research design. The population for this study consisted of all the primary school pupils in Ilorin East Local Government Area of Kwara State. Sample size for the study was 6 primary four classes. Four Instruments were used to elicit information from the participants including treatment packages. They were made up of Performance Test (PT), Instructional Guide for Number-Head-Together Method (IGNM), Instructional Guide for Heuristic Method (IGHM) and Instructional Guide for Conventional Method (IGCM).Seven hypotheses were formulated to guide the study. The instruments were given face and content validity by some selected Social Studies teachers in primary schools, some lecturers in the Department of Early Childhood and Primary Education Kwara State University, Malete were vetting instruments. Pearson's Product Moment Correlation (PPMC) was used to determine the reliability index of 0.84. Research hypotheses were tested, using Analysis of Covariance (ANCOVA) at 0.05 level of significance. Findings showed that there was significant effect of Numbered-heads-together and Heuristic methods on pupils' academic performance in Social Studies ($F_{(2; 104)} = 43.620$, $P < 0.05$). Based on the findings of the study, it can be stated that Numbered-Heads-together and Heuristic methods can enhance better performance in Social Studies than the traditional method of teaching. Recommendations were made, Social Studies teachers should be enlightened on the effectiveness of Numbered-Heads-together and Heuristic Methods on pupils' academic performance in Social studies, Curriculum developers in Social Studies like, Federal and State Ministries of Education, school proprietors

Keyword: Numbered-heads-together, Heuristic methods, Academic performance, Social studies.

Introduction

The success of an educational institution is measured by academic performance or how well a pupil meets the standards set out by the institution. The performance of students has for long generated a lot of interest among educators, researchers, government officials, parents, and the students themselves. Many studies have examined the factors that influence student performance in the primary, secondary as well as tertiary education levels, with the purpose of enhancing learning at these stages and reducing the level of drop-out. Academic performance is defined as the measure of what a person has accomplished after exposure to educational program. Recent educational standards of social learning in United States of America proposed that all students should learn social studies both inquiry and learn social

studies through project method (National Council, 2006). Moradeyo (2015) stated that academic performance refers to what children achieve in their studies and how they cope with or accomplish different learning takes given to them by their teachers.

Afolabi (2003) also stated that poor achievement by pupils are always linked to the inability on the part of pupils to understand what has been taught neglecting the fact that the totality of what took place around the learners amount to what influences the learners' performance most especially the teachers and their classroom practices and characteristics. The poor academic performance in general paper was experienced in previous common entrance examinations, 2018 and 2019 respectively where pupils performed in general paper woefully in Kwara State (Kwara State Ministry of Education).

Social Studies is the integrated study of the social sciences and humanities to promote civic competence (National Council for the Social Studies - NCSS, 1994). Within the school programs, Social Studies provides coordinated, systematic study drawing upon disciplines as anthropology, archaeology, economics, geography, history, law, philosophy, political science, psychology, religion, and sociology, as well as appropriate content from the humanities, mathematics and natural sciences. The primary purpose of social studies is to help young people develop the ability to make informed and reasoned decisions for the public good as citizens of a culturally diverse, democratic society in an interdependent world. According to National Teachers' Institute (NCSS, 1999), Social Studies is designed and introduced into the national curriculum of primary and junior secondary schools, to provide functional social education to Nigerian children and youths.

The traditional pedagogical practice, which is confined to conveying information and involves telling, reading, and memorising, and the teacher adopting the "fountain of knowledge" method, have failed to cope with the problems Social Studies and Social science related knowledge subjects needed for development (Kohle, 2012). Appropriate pedagogical methods need to be sought in passing the message of Social studies and Numeracy subjects across to learners. Ajiboye and Ajitoni (2008) observed that pupils learn best by being interested and actively involved in their work, seeing themselves, doing themselves, puzzling themselves, confirming their own suppositions, experimenting themselves, making decisions themselves on the strong-point of ground which they have gathered themselves. Pupils' always make mistakes which they themselves should rectify with the new knowledge and grounds that they have uncovered, themselves. This methodological concept should be participatory via interaction, unity, and action-oriented communication. Numbered-Heads-Together and Heuristic Methods belong to these pedagogic concepts.

It has been established that one of the cooperative learning which gives more time for pupils to think to improve their responses, which facilitates pupils to acquire higher level thinking skill from their peers is the Numbered-Heads-Together (Maheady, 2006). Number Heads Together learning model is the process, whereby pupils are conditioned to contribute thoughts and responsibilities to the achievement of individual and group learning outcomes. According to Trianto (2013), the Numbered-Heads-Together learning model is the kind of cooperative learning that is designed to affect pupils' interaction pattern and as an alternative to the traditional classroom structure; there are four phases in Numbered-Heads-Together learning, which are numbering, asking questions, thinking together, and answering.

Furthermore, one of the instructional strategies that is rarely adopted in teaching and learning activities is heuristic method. Heuristic is a word derived from the Greek language to "find" or "discover" is an adjective for experience-based techniques that help in problem

solving, learning and discovery (Katarzyna &Jaszczolt, 2006). Heuristics method according to Aggarwal (2006) is a method in which children discover and find things for themselves and are placed in the position of discoverers or inventors. He maintained that pupils who are taught in this way, learn to be observant, exact and to think for themselves.

There are so many factors affecting pupils' academic performance in Social studies such factors include: Poor study habits, Anxiety, Poor family structure, Gender, School type. Gender connects to the cultural attributes of both males and females (Nnamani&Oyibe, 2016). However, Bibby and Peil (2004) stated that children who attended private primary schools do better than pupils in public schools. This idea is also back-up by Lioyd (2006) maintained further that the public schools which saw education as a good thing aimed to leave the question of educational achievement or downfall in the hands of the public and their parents.

Statement of the Problem

Poor performance in Social Studies might be as a result of inadequate and inappropriate use of classroom practices by the teachers. This has been a source of concern to all stakeholders in education more especially that Social Studies is a major subject in schools. The poor academic performance in general paper was experienced in previous common entrance examinations, 2018 and 2019 respectively where pupils performed in general paper woefully in Kwara State. While theoretical and empirical evidences on the learner-centered method of teaching have been documented in social studies across the globe, empirical evidence on some of these innovative strategies as combined in this study are not many. To the best of researcher's knowledge, there seems to be no documented empirical evidence on the effects of Numbered-Heads-Together and Heuristic Methods on pupils' academic performance in Social studies in Ilorin East Local Government Area of Kwara State, Nigeria. Although some researchers have worked on other strategies or teaching methods such as role play and problem-solving strategy, jigsaw method of teaching. In spite of these efforts, the problem of pupils' poor academic performance in social studies persists. This creates a researchable gap in knowledge, the gap which this study intends to fill by investigating the effects of Numbered-Heads-Together and Heuristic Methods on the pupils' academic performance in Social studies in Ilorin East Local Government Area of Kwara State, Nigeria.

Hypotheses

The following research hypotheses were formulated for the study;

$H_0$1: There is no significant main effect of treatment on pupils' academic performance in social studies in Ilorin East Local Government Area of Kwara State.

$H_0$2: There is no significant effect of gender on pupils' academic performance in social studies in Ilorin East Local Government Area of Kwara State.

$H_0$3: There is no significant effect of school type on pupils' academic performance in social studies in Ilorin East Local Government Area of Kwara State.

$H_0$4: There is no significant interaction effect of treatment and gender on pupils' academic performance in social studies in Ilorin East Local Government Area of Kwara State.

$H_0$5: There is no significant interaction effect of treatment and school type on pupils' academic performance in social studies in Ilorin East Local Government Area of Kwara State.

$H_0$6: There is no significant interaction effect of gender and school type on pupils'

academic performance in social studies in Ilorin East Local Government Area of Kwara State.

$H_0$7: There is no significant interaction effect of treatment, gender, and school type on pupils' academic performance in social studies in Ilorin East Local Government Area of Kwara State.

Methodology

The research design adopted for this study is the pre-test, post-test, control group quasi-experimental research design. Here, there was non-randomization of the participants because they have to be in their intact classes. Hence, a factorial design of 3x2x2 was adopted for the study. The first factorial level was the two experimental groups (Numbered-Heads-Together and Heuristic Strategies) and the control group. The second factorial level was gender in either male (M) or female (F). While the third factorial level was the school type in either public or private. This design allowed for the experimental groups to receive treatment while the control group did not receive treatment. Although the control groups received a placebo (this means that the control group was also taught the same topics as the experimental group using the traditional lecture method of teaching). However, both the experimental and control groups received the pre-test and post-test before and after the treatment respectively.

The population for this study consisted of all the primary school pupils in Ilorin East Local Government Area of Kwara State. Sample size for the study was 6 primary four classes. The multistage sampling techniques were used. The purposive sampling technique was used to select 6 mixed primary schools (Boys and Girls schools) because of certain and relevant characteristics they possessed that is relevant to the conduct of this study. Schools were classified into two strata (public and private) from which six schools were randomly selected. Three private schools as well as three public schools were selected randomly as the experimental groups and control group. Four Instruments were used to elicit information from the participants including treatment packages; Social Studies Performance Test (SSPT), Instructional Guide for Number-Heads-Together Method (IGNM), Instructional Guide for Heuristic Method (IGHM), Instructional Guide for Conventional Method (IGCM). The instrument was validated by experts in the Department of Early Childhood and Primary Education and to establish the reliability of the SSPT, 25 copies of the draft were trial-tested two times, giving two weeks interval on the randomly selected pupils outside the sample schools. Thereafter, the Pearson's Product Moment Correlation (PPMC) was used to determine the reliability index of 0.84. The hypotheses were tested, using Analysis of Covariance (ANCOVA) at 0.05 level of significance.

Results

Table 2: Summary of Analysis of Co-variance (ANOVA) on effect of Treatment on Pupils' Academic Performance in Social Studies

Source	Type III Sum of Squares	df	Mean Square	F	Sig.
Corrected Model	920.767[a]	12	76.731	6.484	.000
Intercept	5279.663	1	5279.663	446.162	.051
Pretest	12.870	2	6.435	.544	.582

Source	Type III Sum of Squares	df	Mean Square	F	Sig.
Main Effect					
Treatment	516.175	1	516.175	43.620	.000
Gender	87.814	2	43.907	3.170	.068
School type	4.146	1	4.146	.350	.555
Two way Interaction					
Treatment * Gender	40.10	1	40.010	3.381	.069
Treatment * School type	1.531	1	4.537	.065	.937
Gender * School type	6.282	2	3.141	.265	.767
Three way Interaction					
Treatment * Gender * School type	13.900	1	13.900 11.834	1.175	.281
Error	1230,686	104			
Total	124792.000	117			
Correction Total	2151,453	116			

Table 2 shows the effect of treatment on pupils' academic performancein social studies. There was significant effect of treatment on pupils' academic performance in social studies ($F_{(1;104)} = 43.620$, $P < 0.05$). The hypothesis is therefore rejected in the light of the result since the significant value (.000) is less than 0.05. This implies that treatment had significant effect on pupils' academic performance in social studies.

Table 2: Summary of Bonferroni's Post Hoc Pairwise Comparison of the Scores within the three Groups

Treatment	Mean Score	Experiment 1	Experiment 1	Experiment 1
numbered-Heads-Together	81.755			3
Heuristic Method	77.657	*	*	*
Conventional Method	68.833	*	*	*

Table 2 reveals that the significant main effect exposed by table 4 is as a result of the significant difference among: Numbered-Heads-Together Method, Heuristic Method and Conventional Method. Numbered-Heads-Together Method referred to experimental group 1, Heuristic Method referred to experimental group 2 and Conventional Method known as control group. This implies that those taught with Numbered-Heads-Together performed better than those taught with Heuristic Method and those taught with Heuristic Method out-performed significantly than those taught with traditional method.

Discussion of Findings

Findings emanated from this study revealed that there were significant effects of Numbered-Heads-Together and Heuristic Method on pupils' academic performance in social studies in Ilorin East Local Government Area of Kwara State. This signifies that the pupils taught using Numbered-head-together and Heuristic methods performed better than their counterparts taught with conventional method. In the sense that pupils learn best by being interested and actively involved in the teaching and learning activities, by seeing

themselves, doing it themselves, puzzling themselves, confirming their own suppositions, experimenting themselves, making decisions themselves on the strong-point of ground which they have gathered themselves. The two strategies gave room for that because they were child-centered approaches unlike conventional method where teacher dominates the class during teaching and learning and pupils as tabularassa who have nothing to contribute. This findings supported the submissions of Nursyamsi and Aloysius (2015) is a quasi-experimental research aimed at investigating the effect of Numbered-Heads-Together learning strategy on student's retention. They concluded that there is a difference of the retention between the students taught by using NHT learning strategy and those taught by using conventional learning. The students' retention of the NHT learning strategy is 23.83% higher compared to that of the conventional learning.The findings, is also in agreement with Wardhani, (2016).The study was aimed to improve the students' reading skill through Numbered Heads Together. The results show that the students' reading skill improves significantly. The NHT method is able to improve students' reading skill in each cycle which the T-calculation result show that T-calculation of cycle I is 2.51 and cycle II is 3.43, the mean of pre-test I is 53.07 and post-test I is 60.38. In cycle II, the mean of pre-test II, the mean of pre-test II is 54.42 and post-test II is 59.80. So, it can be concluded that there is significant improvement of students' reading skill by applying Numbered Head Together in X B Class of SMA Muhammadiyah Plus Salatiga in the academic year of 2015/2016.

Finding of this study was in tandem with the Mano (2012) conducted study on the impact of using the heuristic teaching approach for teaching mathematics to tenth grade students in Jordan. The experimental group was taught mathematics using the heuristic approach while the control group was taught mathematics using the traditional method of teaching. The findings of the study indicated that there were statistically significant differences in the post- test between the control and the experimental groups in favor of the experimental group.

Conclusion

The study investigated the effects of Numbered-Heads-together and Heuristic methods on pupils' academic performance in Social studies in Ilorin East Local Government Area of Kwara State. Based on the findings of the study, it can be explicitly stated that Numbered-Head-together and Heuristic methods can enhance better performance in Social studies than the traditional method of teaching and learning. But Numbered-Heads-together method is more effective than heuristic method.

Recommendation

Social studies teachers should be enlightened on the effectiveness of Numbered-Heads-together and Heuristic Methods on pupils' academic performance in Social studies and Curriculum developer in Social studies like, Federal and State Ministries of Education, school proprietors and Nigerian Educational Research and Development Council (NERDC) should incorporate Numbered-Heads-together and Heuristic Methods into the Social studies curriculum as one of the innovative strategies that would be used to teach Social studies especially in primary schools.

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EFFECT OF MNEMONICS STRATEGY ON PUPILS' ACADEMIC PERFORMANCE IN LITERACY IN ILORIN WEST LOCAL GOVERNMENT AREA, KWARA STATE, NIGERIA

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Abstract
The study investigated the effects of mnemonics strategy on pupils' academic performance in Literacy in Ilorin West Local Government Area of Kwara State. A pretest-posttest control group quasi-experimental research design was adopted for the study. The population for the study consisted of all Primary one pupils in the Ilorin West Local Government Area of Kwara State. Simple random technique was used to select two private schools and two public schools as the experimental groups, while one public and one private school were randomly selected as control group. Intact classes were used to avoid disruption of classes. Pupils Literacy Performance Test (PLPT), Instructional guide for mnemonics (IGM), and Instructional Guide for conventional Method (IGCM) were used to elicit information. Instruments were validated by lecturers in the Department of Early Childhood and Primary Education and reliably tested at0.77. The data were analyzed using frequency counts and percentage and analysis of covariance (ANCOVA) at 0.05 level of significance. Findings revealed that there was significant main effect of treatment on pupils' academic performance in Literacy ($F_{(1; 69)} = 18.171$; $P<0.05$), there was no significant effect of gender on pupils' academic performance in Literacy ($F_{(1; 69)}=3.512$; $P>0.05$), there was no significant interaction effect of treatment and gender on pupils' academic performance in Literacy ($F_{(1; 69)} = .369$; $P>0.05$). The study concluded that mnemonics strategy can improve pupils' academic performance in literacy. It was therefore recommended among others that pupils should be groomed with mnemonics strategy for adequate retention in literacy.

Keywords: Mnemonics, Literacy, Academic performance, Pupils, Gender

Introduction

At the primary level of education, there are compulsory subjects that pupils must offer because of their status in the curriculum. One of these subjects is Literacy. Out of these subjects, Literacy is very essential for pupils to gain admission into institutions of higher learning. Literacy involves the ability to read and write under close supervision and monitoring of a teacher. It is a kind of learning process whereby the learner is guided and taught how to read and write. The National Policy of Education, under the objectives of primary education noted its relevance, as the first objective; which is to inculcate permanent literary and the ability to communicate effectively. Learning to read in the concept of basic education and literacy programme is a global problem. This has consequently attracted the attention of educators and researchers who are making concerted efforts toward tackling the problem of literacy

Abiri (2017) viewed Literacy as the foundation of learning which sets the face for

the overall learning processes. The author observed that, the initial exposure to the taste of learning is known and called Literacy. In this learning process, learners are mentored in all the rudiments of a language ranging from alphabetical order to organizing their alphabets into how words can be formed from them (alphabets) after which it metamorphoses into reading and writing. Levenson (2009) agreed that Literacy goes beyond knowing how to read and write alone, it encompasses all the available means through which the learners are separated from the shackles of illiteracy to the unedited, that is, accusation with reading and writing skills. Levenson (2009) highlighted the features of literacy; literacy exposes the learners to the rudiments of language, it serves as the bed voice for future learning processes, it is a way of bringing up learning stamina in the learners, and learners are under the close supervision and monitoring of the teacher.

Notably, it is disheartening that research and data from examination bodies like Common Entrance Examination for 2017/2018 session recorded, 40% of Pupils scored 50 marks and above while 60% score below 50 marks in literacy questions. Records also have it that 105 millions of young children in Nigeria are out of schools and these are children that may never acquire Literacy in school (United Nations Educational, Scientific and Cultural Organization, 2015). Literacy plays a central and strategic role in the school system because almost all the school subjects are taught with English language. Adegbile (2019) attested to this that a child cannot learn most of the elementary facts or ideas unless he/she understands the language in which these ideas are expressed. This means that 33% of young children in Nigerian primary schools are literate. This trend of poor performance was evident in a literacy competition organized by the Kaduna State Ministry of Education in partnership with Universal Writers and Authors (UWA) (2022), held in Kaduna State, where only 30% of the participants passed above 50% which could be due to their low level of knowledge acquisition of literacy; whereas others schools did not even attend the competition, some of the schools were saying " they did not participate because their learners are poor in literacy". Thus, improvement of pupils' performance in Literacy from basic level of education may help improve performance at higher levels of education.

Learners may have difficulty in learning during teaching; because the instructions and strategy employed by the teachers are outdated, do not enhance retention, do not allow for learners to reconcile previous idea or experience with new words and do not allow for active participation of learners, thereby learners do not find it interesting. During the researcher's visit to schools in Ilorin, Kwara state, the researcher observed that, most learners in primary school sleep during lessons and their attention is not captured by the teachers in Ilorin West Local Government Area based on experience. Thus, this prolonged issue can be a factor which has been diminishing the level of academic performance of pupils in Literacy. Nowadays, pupils' interest in Literacy has been truncated due to the fact that teachers are out of ideas on the strategy to use in capturing learners' attention. Amiryousefi and Ketabi (2011) revealed that pupils are unaware that words are made up of different sounds; they are unaware that words are made up of the addition of letters. Some pupils are sometimes frustrated when they are faced with new words, most likely because they have difficulty retaining them. One way a teacher can help pupils successfully link prior knowledge with new words is through a strategy that promotes remembrance. Mnemonic is a memory-enhancing instructional strategy that involves teaching pupils to link new information taught to information they already know.

Mnemonics are mental aids that assists learners to remember distinctive sorts of items and information, for example, new word forms, names, historical dates, numbers,

formulas, and various rules and lists. Mnemonics links new information to earlier knowledge by utilizing visual or acoustic cues (Kuder, 2017). Many different strategies are utilized in Mnemonic instructions that are designed to enhance pupils' memory of new information. The keywords, peg words, and letter strategies work with various combinations and thought processes, but all of them can be utilized to manage facts and information (Mastropieri & Scruggs, 2017).

One of the most significant current discussions in the era of learning and teaching is mnemonic vocabulary techniques that play a key role in learning the second or foreign language because it connects new learning to prior knowledge through the use of visual or acoustic cues (Ashoori & Yazdani 2015). Azmi, Najmi and Rouyan (2016), revealed that the use of mnemonic technique had significant effect on pupils' English vocabulary development. Egbe and Cajetan (2020) investigated the effect of mnemonics on Nigerian senior secondary school students' achievement in English stress patterns. The result indicated that the mnemonic technique had a significant effect on students' achievement in English stress patterns.

Ashoori and Yazdani (2015), attempted to find out the effectiveness of mnemonic devices as a memory strategy on the learners' vocabulary retention. The result showed that through mnemonic devices are more influential than the traditional methods. Also, he result demonstrated that learners' delayed recognition of second language vocabulary is not influenced by the passage of time, it implies that words learned via mnemonics were retrieved well both in the process of immediate and delayed retention. This study showed that memory strategies like mnemonics are of great application and importance in the process of short-term and long-term retention of learners. Thus, mnemonic devices should be given prime attention by both material developers and instructors as a potentially efficient technique for vocabulary instruction, acquisition, and long-term retention at foreign language improvement.

Egbe and Cajetan (2020) this study investigated the effect of mnemonics on Nigerian senior secondary school students' achievement in English stress patterns. The result indicated that the mnemonic technique had a significant effect on students' achievement in English stress patterns. Lubin and Edward (2016), conducted a study on mnemonic instruction in science and social studies for students with learning Problems: areview. The study discusses mnemonic instruction, including types, versatility in use, and effectiveness with struggling learners. The specific emphasis then is placed on research on mnemonic strategies in the content areas of science and social studies. With mnemonic instruction, studies have shown that students not only learn content but they are more motivated to learn. They enjoyed instruction and as a result paid more attention in class than when traditional method of instruction is used. Mnemonic instruction may help students with learning problems remember concepts as they tend to be less motivated than their typically developing peers (Smith, Polloway, Doughty, Patton, & Dowdy, 2015). This study will make use of gender as part of the moderating variable.

Olayemi (2018) opined that gender has significant effect on Pupils' academic performance in literacy. This contradicted the finding of Dania (2014) who revealed that gender has no significant effect on Pupils' academic performance in literacy. With these disputing figures, it is therefore necessary to find out gender has any main effect in the academic performance of pupils on Literacy and since it has not generally been found that gender factor has either positive, negative, or no contribution to academic performance, it is therefore necessary in this study to find out if gender has any main effect on the academic

performance of pupils in Literacy.

The study was guided by Lev Vygotsky's theory of social constructivism which was presented by different opinions, views, and arguments of scholars. Lev Vygotsky propounded his theory of social constructivism in the year 1968. He emphasized the central importance of social factors, Vygotsky (1981) considered the child to be primarily an apprentice who learns the acceptable behaviors directly from social interaction with more knowledgeable peers. In addition to parents, other adults, and older children who provide essential support within a cultural environment. According to Vygotsky, children have zones of proximal development representing all the skills and knowledge children alone cannot presently understand, but are capable of learning through some form of support and guided social interactions.

Vygotsky theory on social constructivism supports this study because it connects new learning to prior knowledge through the use of visual or acoustic cues. Mnemonic is an instructional strategy, technique or device intended to help pupils enhance their memory of vital information that includes teaching pupils to connect the new data to the information that they already know. In Vygotsky theory on constructivism, children would be given hint/cue by the teacher in order to answer questions or solve problems, thus, in Literacy this method can be also used through the means of mnemonics which could be inform of different means, and giving a cue to learners is inclusive.

Statement of the Problem

Literacy as a subject affects all aspects of human life at different levels. Thus, the need to know how to read and write is necessary. The National Policy of Education in its objectives for primary education also noted in its first objective, which is to inculcate permanent literary and the ability to communicate effectively. Despite the efforts from the federal government to promote free education for pupils, pupils still perform poorly in Literacy. Many efforts have been made by researchers in the past and are still ongoing to improve pupils' literacy performance while using different strategies such as differentiated instruction, concrete representational abstract, and concept mapping. In spite of these efforts, the problem of pupils' poor academic performance in Literacy still persists. One can infer from the foregoing that, to improve pupils' academic performance in Literacy, there is a need to explore other strategies that can captivate the interest of the pupils towards Literacy skill development, reconcile new knowledge with existing knowledge and a means to remember what have been taught. This creates a researchable gap; the gap in which this study filled by examining the effects of Mnemonics strategy on pupils' Literacy academic performance in Ilorin West Local Government Area of Kwara State, Nigeria. This is because there seems to be no documented empirical evidence on the effects of Mnemonics strategy on pupils' academic performance in Literacy in Ilorin West Local Government Area of Kwara State, Nigeria.

Purpose of the Study

The study aim at investigating the effects of Mnemonics Strategy on Pupils' Academic Performance in Literacy in Ilorin West Local Government Area, Kwara State, Nigeria. Therefore the specific objectives are to :

1. examine the main effect of treatment on pupils' academic performance in literacy in Ilorin West Local Government Area of Kwara State.
2. determine the main effect of gender on pupils' academic performance in literacy in Ilorin West Local Government Area of Kwara State.

3. investigate the interaction effect of treatment and gender on pupils' academic performance in literacy in Ilorin West Local Government Area of Kwara State.

Hypotheses

The following hypotheses were formulated for this study, and were tested at 0.05 level of significance

$H_0$1: There is no significant main effect of treatment on pupils' academic performance in Literacy in Ilorin West Local Government Area of Kwara State.

$H_0$2: There is no significant main effect of gender on pupils' academic performance in Literacy in Ilorin West Local Government Area of Kwara State.

$H_0$3: There is no significant interaction effect of treatment and gender on pupils' academic performance in Literacy in Ilorin West Local Government Area of Kwara State.

Methodology

The study adopted a pretest-posttest control group quasi-experimental research design. The population of this study consisted of all primary one pupils in the Ilorin West Local Government Area of Kwara State. Simple random technique was used to select two private schools and two public schools as the experimental groups, while one public and one private school were randomly selected as control group. Intact classes were used to avoid disruption of classes. Sample size comprised 74 primary pupils. Pupils Literacy Performance Test (PLPT), Instructional guide for mnemonics (IGM), and Instructional Guide for conventional Method (IGCM) were used to elicit information. Instruments were validated by lecturers in the department of Early Childhood and Primary Education and reliably tested at 0.77. The data were analyzed using frequency counts and percentage and analysis of covariance (ANCOVA) at 0.05 level of significance

Results

Hypothesis One: There is no significant main effect of treatment on pupils' academic performance in Literacy in Ilorin West Local Government Area of Kwara State.

Table 1: Summary of Analysis of Covariance (ANCOVA) showing the Main Effect of Treatment on Pupils' Academic Performance in Literacy

Source	Type III Sum of Squares	df	Mean Square	F	Sig.
Corrected Model	169.760	4	42.440	5.990	.000
Intercept	1576.469	1	1576.469	22.497	.000
Pretest	12.731	1	12.731	1.797	.184
Treatment	28.744	1	128.744	18.171	.000
Gender	24.880	1	24.880	3.512	.065
Treatment * gender	2.617	1	2.617	.369	.545
Error	488.888	69	7.085		
Total	21706.000	74			
Corrected Total	658.649	73			

a. R Squared = .258 (Adjusted R Squared = .215)

Table 1shows the effect of treatment on pupils' academic performance in Literacy in Ilorin West Local Government Area of Kwara State. There was significant main effect of treatment on pupils' academic performance in Literacy in Ilorin West Local Government Area, Kwara State. ($F(1; 69) = 18.171$, $P < 0.05$). The hypothesis is therefore rejected in the light of the result since the significant value (.000) is less than 0.05. This implies that treatment had significant effect on pupils' academic performance in Literacy in Ilorin West Local Government Area, Kwara State.

Table 2: Summary of Bonferroni's Post Hoc Pairwise Comparison of the scores within the two groups

Treatment	Mean Difference	Experimental	Control Group
Mnemonics strategy	18.091	*	
Conventional Method	15.094		*

Table 2 revealed that the significant main effect exposed by table 1 is as a result the significant difference between Mnemonics strategy and conventional method. Mnemonics strategy refers to experimental group, while the conventional method is known as control group. This implies that those exposed to Mnemonics strategy (18.091) performed significantly better than those exposed to conventional method (15.094).

Table 3: Summary of Estimated Marginal Means with the Groups

Group	Mean	Std. Error
Experimental	18.091	.422
Control	15.094	.547

Table 3 revealed that the significant main effect exposed by table 2 is as a result of the significant difference among Mnemonics and Conventional method. This implies that those exposed to treatment (mean = 18.091) performed significantly better than those exposed to conventional method (mean = 15.094).

Hypothesis Two: There is no significant main effect of gender on pupils' academic performance in Literacy in Ilorin West Local Government Area of Kwara State.

Table 1 also revealed the effect of gender on pupils' academic performance in Literacy in Ilorin West Local Government Area of Kwara State. There was no significant effect of gender on pupils' academic performance in Literacy in Ilorin West Local Government Area of Kwara State ($F_{(1;69)}=3.512$; $P>0.05$). The hypothesis is therefore not rejected in the light of the result since the significant value (.065) is greater than 0.05. This implies that gender had no significant effect on pupils' academic performance in Literacy in Ilorin West Local Government Area of Kwara State.

Hypothesis Three: There is no significant interaction effect of treatment and gender on pupils' academic performance in Literacy in Ilorin West Local Government Area of Kwara State

Table 1 also revealed the interaction effect of treatment and gender on pupils' academic performance in Literacy in Ilorin West Local Government Area of Kwara State. There was no significant interaction effect of treatment and gender on pupils' academic performance in

Literacy in Ilorin West Local Government Area of Kwara State ($F_{(1; 69)} = .369$; $P>0.05$). The hypothesis is therefore not rejected in the light of the result since the significant value (.545) is greater than 0.05. This implies that interaction of treatment and gender had no significant effect on pupils' academic performance in Literacy in Ilorin West Local Government Area of Kwara State.

Discussion of Findings

The finding of this study revealed that there was significant main effect of treatment on pupils' academic performance in literacy in Ilorin West Local Government Area, Kwara State. This implies that, pupils who were taught literacy using Mnemonics strategy performed better than those taught using the conventional method. Based on this finding, it can be opined that, pupils' academic performance can be improved through the use of Mnemonics strategy which enhances retention and linking letters to words. The finding of this study is in tandem with Azmi, Najmi and Rouyan (2016), which revealed that the use of mnemonic technique had significant effect on pupils' English vocabulary development. The study of Ashoori and Yazdani Moghadam (2015), also showed that memory strategies like mnemonics are of great application and importance in the process of short term and long-term retention of English learners. Also, Egbe and Cajetan (2020) indicated that the mnemonic technique had a significant effect on students' achievement in English stress patterns. Thus, mnemonic devices should be given prime attention by both English Learners, material developers and instructors as a potentially efficient technique for vocabulary instruction, acquisition, and long-term retention at foreign language improvement.

Also, this study revealed that there was no significant main effect of gender on pupils' academic performance in literacy in Ilorin West Local Government Area, Kwara State. This implies that irrespective of gender difference pupils' performance in literacy was improved. One gender did not perform better than the other, although there maybe differences but it is not significant. This finding is in line with the finding of Fauto and Friedman (2005), who submitted that there was no significant difference between male and female cognitive ability. This is in line with the submission Robinson and Lubienski (2011) which shows that there is no significance difference based on gender in reading. This finding negates Ajayi (2017) who found significant gender differences in the academic performance of students. The female students were found performing their male counterparts.

Another finding of this study revealed that, there was no significant interaction effect of treatment and gender on pupils' academic performance. This finding implies that the use of mnemonics improved both male and female pupils' performance in literacy, female pupils did not perform better than males when taught using mnemonics neither did male pupils perform better than females.

Conclusion

Based on the findings of this research, it was evident that Mnemonic strategy has significant effect on pupils' academic performance in literacy. Though, the treatment has no significant effect on male and female pupils, there was still a little improvement in the pupils' performance in literacy. Hence, their performance was enhanced; this shows that this strategy improved pupils' academic performance in literacy.

Recommendations

Based on the findings, the following recommendations were given:

1. Teachers in primary schools should be encouraged on the use of mnemonics strategy in teaching Literacy, as this will enhance retention of knowledge in pupils
2. Seminars and workshops should be organized by the school administration regularly to educate teachers on new strategies that can enhance the retention of pupils
3. Pupils should be groomed with Mnemonics Strategy for adequate retention in Literacy.

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PRESCHOOL TEACHERS ATTITUDE TOWARDS SLOW LEARNERS IN POST COVID-19 ERA IN ILORIN EAST LOCAL GOVERNMENT AREA OF KWARA STATE, NIGERIA

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Abstract
The study examined preschool teachers' attitude towards slow learners in post COVID-19 era. The research design adopted was descriptive survey design. One research question and two hypotheses were raised and formulated for the study respectively. The population of this study comprised all private and public primary school's teachers in Ilorin East Local Government Area of Kwara State. One hundred and seventy preschool teachers were randomly selected as sampled size. The questionnaire titled 'Preschool Teachers Attitude towards Slow Learners in Post COVID-19 Era Questionnaire' (PTATSLPCQ). PTATSLPCQ was given face and content validity by the experts in the field of early childhood and primary education and special education, Kwara State University Malete. The instrument was administered and re-administered within the interval of two weeks to the same set of respondents outside the study sampled. Pearson Product Moment Correlation (PPMC) was used to determine the reliability co-efficiency which was (r=.79). The data collected were analyzed using descriptive statistics for the research question while research hypotheses were tested using inferential statistics of t-test at 0.05 level of significance .The results showed that the preschool teachers' had negative attitude towards slow learners in Ilorin East local Government Area of Kwara State. Conclusion made based on the finding, it can be concluded that preschool teachers' had negative attitude towards slow learners in Ilorin East local Government Area of Kwara state.

Keywords: Preschool Teachers, Attitude, Slow Learners and Post Covid-19 Era

Introduction

The primary school enrolment population is increasing by leaps and bounds; however, the infrastructure for education has not grown at the same rate, though, schools must accommodate all categories of learners in mainstream settings, where the government has not taken full responsibility for special children. National Development Plan (NDP), 2010/11-2014/15 shows that 10% of school-age children have special education needs, which indicates the need for an inclusive learning environment. Unfortunately, the nature of teacher training hardly considers inclusive education especially for slow learners, something that leaves teachers without the core knowledge and pedagogical skills needed to ensure that all children develop strong foundations in basic literacy and numeracy

The history of education shows that the education system from the beginning was divided into two systems, namely special education and general education. Those who have

different disabilities were admitted to special schools and those who do not have any kind of disability were enrolled in general schools (Dash, 2006).

"Slow learners" was used to refer to students who are intelligent but are classified as handicapped and are not able to cope with traditional academic work. It is used for instructional purposes rather than labelling. As Lescano (1995) cited in Penn (2016) explains, it is important to distinguish between slow learners and those who have learning disabilities. The former refers to a student who does not learn due to general socio-cultural problems, a frustrating past, language barrier, classroom experiences, inadequate use of strategies, or a lack of interest. The latter refers to students who are diagnosed as "learning disabled" by specialists in child psychology. A slow learner child can almost be found in every school inclusion. Ana (2012) revealed that almost 14.1% of children, including children slow learners. This amount is more than the total number of children learning disabilities, retarded children, and children with autism. Based on data from Ministry of Social Affairs of the Republic of Indonesia (in Yachya Hasyim, 2013)

According to Harrell (2008), “attitude is everything”. It affects and influences a person's behaviour which in turn affect performance of persons. It often involves feelings, opinions and dispositions which affects behaviour of people. How successful a person is in achieving his or her set goals is a function of the person's attitude. A teacher's attitude to teaching will certainly affect his or her performance in the classroom. Attitude is about emotions and feelings, and effective teachers willingly share emotions and feelings. These includes enthusiasm, affection, patience, sadness, disapproval as well as a sincere interest and care about their students. The variable of interest to the study are gender and school type.

Okoye (2008) maintained that because of biological differences in human make-up such as those between man and woman, people presume that one sex may have a learning edge over the other. Intrinsically, there are practically no significant differences in the intelligence between male and female that is traceable to gender differences. He argued that the fact that men are the dominant and even superior sex does not mean that they are artistically better than women. It has become a general feeling or stigma that Social Studies is a girl's domain. A study through a meta-analysis shows that females tend to perform better in Social Studies (Hyde & Mertzb, 2009) while males tend to perform better in computation, and there is no significant gender difference in understanding literacy concepts.

Bibby and Peil (2004) revealed that children who attended private primary schools do better than pupils in public schools. This idea is also backed-up by Lioyd (2006) who maintained further that public school which saw education as a good thing aimed to leave the question of educational achievement or downfall in the hands of the public schools and their parents. It shows that public school educations are yet to meet up with the academic expectations. This, of course, is what may be the general indifference of the people to government-owned business or property, a situation that has resulted in a nonchalant attitude of government workers, including teachers in public schools who are made to believe that a brilliant child would achieve automatically at school with little or no active help coming from the teacher. It has been observed from literature that study of this type, much had never been carried out in Ilorin East Local Government Area of Kwara State. Therefore, this study is meant to fill the gap requiring empirical evidence regarding teachers' attitude towards slow learners.

Statement of the Problem

Everyone has the right to develop the potential of humanity to be fully human through education. This is consistent with the concept of education for all. National

Development Plan (NDP), 2010/11-2014/15 shows that 10% of school-age children have special education needs, which indicates the need for an inclusive learning environment. Unfortunately, the nature of teacher training hardly considers inclusive education especially for slow learners, something that leaves teachers without the core knowledge and pedagogical skills needed to ensure that all children develop strong foundations in basic literacy and numeracy. In this study, the researcher seeks to determine teachers' attitude towards slow learners in post COVID-19 Era in Ilorin East Local government area of Kwara state. It has been observed from the literature that study of this type, much had never been carried out in Moro Local Government Area of Kwara State. Therefore, this is meant to fill the gap requiring empirical evidence regarding the teachers' attitude towards slow learners.

Purpose of the Study

The main purpose of this study is to find out teachers' attitude towards slow learners in post COVID-19 Era Ilorin East Local Government Area of Kwara State. Specifically, the study aimed to examine;

1. If there is any significant difference in teachers' attitude towards slow learners in post COVID-19 Era Ilorin East Local Government Area of Kwara State based on gender
2. Whether there is any significant difference in teachers' attitude towards slow learners in post COVID-19 Era Ilorin East Local Government Area of Kwara State based on school type

Research Question

One research question was raised to guide the study.

1. What is preschool teachers' attitude towards slow learners in Ilorin East local Government Area of Kwara State?

Hypotheses

The following research hypotheses were tested.

H_o1: There is no significant difference in preschool teachers' attitude towards slow learners in post COVID-19 Era Ilorin East Local Government Area of Kwara State based on gender

H_o2: There is no significant difference in preschool teachers' attitude towards slow learners in post COVID-19 Era Ilorin East Local Government Area of Kwara State based on school type

Methodology

The study adopted descriptive survey research design, The population of this study comprised all private and public primary school's teachers in Ilorin East Local Government Area of Kwara State. According to Annual School Census Report, Kwara State Ministry of Education and Human Capital Development, 2018, Ilorin East Local Government has a total number of one hundred and sixty eight public and private primary schools and one thousand forty six teachers (1046) in public primary schools in Ilorin East Local Government Area of Kwara State, out of which one hundred and seventy teachers were randomly selected as sampled size, the study adopting the Krejcie and Morgan sample table, because it will not be possible for the researchers to involve all the primary school teachers in Ilorin East Local Government area of Kwara State. One Instrument was used to obtain data from the

respondents. A researcher designed questionnaire which was used for the purpose of this study. The questionnaire titled 'Preschool Teachers Attitude Towards Slow Learners in Post Covid-19 Era Questionnaire' (PTATSLPCQ). The PTATSLPCQ was given face and content VALIDIty by the experts in the field of early childhood and primary education and special education, Kwara State University Malete. The instrument was administered and re-administered within the interval of two weeks to the same set of respondents. Pearson Product Moment Correlation (PPMC) was used to determine the reliability co-efficiency which yielded reliability co-efficiency (r=.79). The data collected were analyzed using descriptive statistics of frequency counts, percentage and mean for the research question while hypotheses were tested using inferential statistics of t-test at 0.05level of significance.

Results

Research Question: What is preschool teachers' attitude towards slow learners in Ilorin East local Government Area of kwara State?

Table1: Preschool Teachers' Attitude towards Slow Learners in Ilorin East Local Government Area of Kwara State

S/N	Items	Strongly Agree	Agree	Disagree	Strongly Disagree	Mean
1.	Some children learn faster than others	10(5.8)	48(27.7)	113(65.3)		2.22
2.	Children are taught under the same condition	15(8.7)	79(45.7)	33(19.1)	44(25.4)	2.38
3.	Slow learners need to be taking care specially	12(6.9)	49(28.3)	38(33.5)	52(30.0)	2.12
4.	Children in class do not have different learning capacity	2(1.2)	27(15.6)	67(39.7)	75(43.4)	1.74
5.	Pupils' need not to be treated specially in class	17(9.8)	49(28.3)	95(54.9)	10(5.8)	2.42
6.	Slow learners are given special treatment in my class	110(63.6)	34(19.7)	27(15.6)		2.48
7.	Pupils' can learn at the pace of teachers only	17(9.8)	77(44.5)	66(38.2)	11(6.4)	2.58
8.	There is no need for teaching pupils' differently because the one that will learn will learn vice vase	17(9.8)	65(37.6)	61(35.3)	28(16.2)	2.41
9.	It is not every pupil that can understand what the teacher is teaching		2(1.2)	88 (50.9)	81(46.8)	1.53
10.	Teachers need to consider	5(2.9)	22(12.7)	81(46.8)	63(36.4)	1.81

Table 1 shows preschool teachers' attitude towards slow learners in Ilorin East local Government Area of Kwara State, the detailed analysis is as follows: Some children learn

faster than others (Mean =2.22), Children taught under the same condition (Mean =2.38), Slow learners need to be taking care specially (Mean =2.12), Children in class do not have different learning capacity (Mean =1.74), Pupils' need not to be treated specially in class(Mean =2.42), Slow learners are given special treatment in my class (Mean =2.48), Pupils' can learn at the pace of teachers only (Mean =2.58), There is no need for teaching pupils' differently because the one that will learn will learn vice versa (Mean =2.41),It is not every pupil that can understand what the teachers is teaching (Mean=1.53), Teachers need to consider individual difference in class (Mean =1.81). The weighted average is 2.16 which is a numeric indicator that the preschool teachers had negative attitude towards slow learners in Ilorin East local Government Area of kwara State.

Hypothesis one: There is no significant difference of preschool teachers' attitude towards slow learners in post covid-19 Era Ilorin East Local Government Area of kwara State based on gender

Table 2: Summary of t-test analysis showing the difference in Preschool Teachers' Attitude towards slow learners in Post COVID-19 Era Ilorin East Local Government Area of Kwara State based on Gender

Gender	N	Mean	Std. Deviation	t	df	df	Remark
Male	76	17.53	8.927	.496	168	.287	Not
Female	94	16.82	9.438				Significant

Table 2 shows the difference in preschool teachers' attitude towards slow learners in post covid-19 Era Ilorin East Local Government Area of kwara State based on gender(t = .496, df = 168, p > 0.05). The hypothesis is therefore not rejected in the light of the result since the significant level is greater than 0.05. This implies that there is no significant difference in preschool teachers' attitude towards slow learners in post covid-19 Era Ilorin East Local Government Area of kwara State based on gender

Hypothesis Two: There is no significant difference in preschool teachers' attitude towards slow learners in post COVID-19 Era in Ilorin East Local Government Area of Kwara State based on school type

Table 3: Summary of t-test analysis showing preschool teachers' attitude towards slow learners in post COVID-19 Era Ilorin East Local Government Area of Kwara State based on school type

School	N	Mean	Std. Deviation	t	df	df	Remark
Public	94	17.027	9.571	-.230	168	.063	Not
Private	76	17.366	8.519				Significant

Table 4 shows the difference in preschool teachers' attitude towards slow learners in post covid-19 Era Ilorin East Local Government Area of Kwara State based on school type(t = -.230, df = 168, p > 0.05). The hypothesis is therefore not rejected in the light of the results since the significant level is greater than 0.05. This implies that there is no significant difference in preschool teachers' attitude towards slow learners in post COVID-19 Era Ilorin East Local Government Area of kwara State based on school type.

Discussion

The findings of the study showed that the preschool teachers had negative attitude towards slow learners in Ilorin East local Government Area of Kwara State. This result might base on the fact that the failure preschool teachers to access the workshops and seminars. The results of the study are similar to the study conducted by Bindhu and Niranjana (2014) they did not found significant difference about an attitude towards inclusive education among teachers about locale of the institution. The study was not in agreement with the studies carried out by (Chavhan, 2013; Kaur & Kaur, 2015; Kumar, 2016; Nanda and Jana, 2017; Bansal, 2018), which also showed that urban teachers had a more positive attitude towards inclusive education in comparison to rural teachers but Bindhu & Niranjana (2014) did not find significant difference about an attitude towards inclusive education among teachers about locale of the institution. The finding also revealed that there is no significant difference of preschool teachers' attitude towards slow learners in post COVID-19 Era Ilorin East Local Government Area of Kwara state based on gender. The results are similar with the study of Bhakta and Shit (2016) which revealed that no significant difference between the attitude of male and female teachers towards inclusive education. The finding also revealed that there is no significant difference of preschool teachers' attitude towards slow learners in post COVID-19 Era Ilorin East Local Government Area of Kwara state based on school type.

Conclusion

Based on the results, it can be concluded that preschool teachers had negative attitude towards slow learners in Ilorin East Local Government Area of Kwara state and gender and school type had no significant difference in preschool teachers' attitude towards slow learners in post COVID-19 Era in Ilorin East Local Government Area of Kwara State

Recommendations

Based on the findings of the study, these recommendations were made;

1. Intensive efforts should be made by Ministry of Education and Government to organize seminars, workshop and conferences for the teachers.
2. The course in special education department should be offered by prospective teachers from the beginning of the educational programmes.

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NIGERIA'S SOCIAL POLICIES AND DEVELOPMENTAL STRATEGIES: QUESTIONING MAL-ADMINISTRATION AND GOVERNMENTAL INSINCERITY OF PURPOSE

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Abstract
The study examined Nigeria's social policies and developmental strategies. Governments across the world intended to be responsible through holistic implementation of developmental programmes, but the level of sincerity of each government actually determines the extent of the manifestation of implementation. In Nigeria, the immunity clause that makes lawmakers the breakers legitimize leadership maladministration translated into mismanagement, misappropriation and misapplication of funds meant for social upkeeps and development. This enables leaders to divert policies meant for social development to self-development that stagnates national growth. That is why Nigeria's housing policy, national health scheme, Nigeria's economic policies were all fiasco. Hence, this paper examined the factors responsible for failed policies that crippled development. The study employs the historical method with the application of social contract theory. The paper discovers that Nigeria's leaders are grossly irresponsible and view good governance as a mirage. Hence, the conversion of public funds to private use. The paper reveals that most of the funds budgeted for policies are siphoned by the leaders in collaboration with other stakeholders. The paper therefore, recommended among others that the masses should participate in the implementation of policies meant for their welfare and lastly there should be strict enforcement of the rule of law on all defaulters of the process of policies metamorphosis into development irrespective of social status.

Keywords: Developments, Governments, Leaders, Maladministration, Social Policies.

Introduction

Responsible governments the world over showcase their worth through the formulation and implementation of policies that support social development. Policies formulated are meant to upgrade the standard of living of the masses and the state of society. This means that government policies must improve the basic necessities of life (food, clothing, and shelter), and beyond for the masses. The beyond refers to education, health, and the likes. However, all policies formulated are in good faith, but the process of implementation that is disrupted accounts for the crippling of development in Nigeria. Much as every government will prefer being referred to as responsible, the level of sincerity of each government manifested in the extent to which it is able to curb excesses of political office holders determines the success of policies implemented. This amount to the fact that the policy-makers are those that obstruct its implementation. This attested to the corrupt nature of the governments and the insincere attitude with which they administer the country. This paper majorly reviews the Nigerian housing policy along with some governmental policies. As for the housing policy, it has been unable to meet the targeted objective, which is providing shelter for the homeless. Equally, for most of the agencies created by the government for social sanity, they end up polluting the society by using the agency to either witch hunt, intimidate or demoralize political opponents. All these and more that trademarked Nigerian leaders which crippled social development are issues to be discussed

in this paper.

Agagu (2010) argues that governments all over the world have devised various means of ameliorating the problems confronting their citizens. These they do through the establishment of various institutions and organs of government as well as formulating and implementing various policies for this purpose. Indeed, different policies can be used to address market and government failures. However, if social welfare is the aim of Nigerian leaders in formulating policies, the repeated failures of these policies since independence would have been addressed. The repetition of social policies resulting in failures manifests the aims of the leaders as funds meant for executing those policies are diverted for personal use.

Thomas Hobbes propounded the social contract theory while John Locke, Jean Jacques Rousseau and Immanuel Kant developed it. The idea of the social contract theory goes back to the days of Epicurus. To explicate the idea of the social contract, it was analyzed contractual approaches into five elements: (i) the role of the social contract (ii) the parties (iii) the agreement (iv) object of the agreement (v) what the agreement is supposed to show. The English man Hobbes explained that in primeval times (the olden days) when there was no organization the state of nature was one in which there were no enforceable criteria of right and wrong, there was no institutionalized society-and people took for themselves all that they could and human life was "solitary, poor, nasty, brutish and short". The state of nature was therefore a state of war. Due to this scenario, people gathered together to establish government amounting to choosing some people as leaders while others obey voluntarily. The role of the social contract is to establish moral and political rules of behavior. The contract then divides the society into two parties, that is the leaders and the led. The agreement is that some people will be chosen as leaders while others obey them voluntarily. The object of the agreement is that leaders must be capable of protecting people and private property and if not, they must be removed from power (Locke, 1690; Rousseau, 1762).

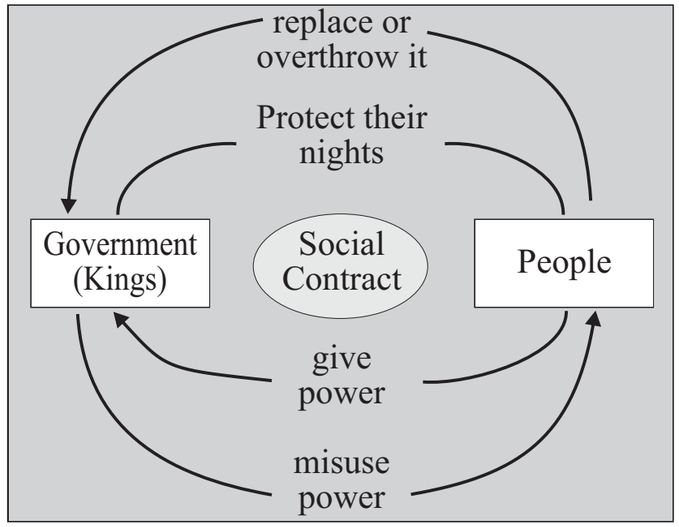

Figure 1: Social Contract Theory
Source: Rousseau (1762)

This theory explains government and governance. Governance, ordinarily means how public institutions established by the government manage public affairs to ensure effective use of resources to achieve the good life expected of citizens in a given state (Agagu, 2010). The question is what isthe good life expected of citizens? These include protection, and the first and most important protection for man is food. The government is expected to ensure food security for its citizens. Dairo (2010) noted that the consequences of "food insecurity" have far-reaching effects on the people and the general development of the nation. When people have restricted access to good quality food, the children are the first casualty, and malnutrition becomes the order of the day which eventually leads to child mortality. The control or eradication of hunger and diseases through food security is achievable by good policy formulation and implementation. The same thing applies to health care, good education and protection of lives and properties all of which citizens cannot provide by themselves. Failure of the government in providing these services recommends their removal. It is against this background that this paper examined Nigeria's social policies and developmental strategies with reference to questioning maladministration and governmental insincerity of purpose.

An Analysis of Some Policies in Nigeria

Public policy can be seen as an intention, pronouncement, a general plan of action adopted by a government to solve a social problem, counter a threat, deal with a given circumstance or pursue an objective in a given state (Agagu, 2020).Public or social policies are formulated to enhance governance while governance is meant to establish a desirable lifestyle for the masses. Governance itself is affected by the character of leaders who are the drivers of the nation. There are two factors according to Abegunde (2010) that influence the direction of the development of nations. They are the character and nature of political leadership on the one hand and the system of governance in operation on the other. Leadership character determines the success and failure of policies.

The national housing policy which was formulated with the objective of providing shelter for Nigerians failed because of corruption. As we all know that shelter is very important because of its centrality to man's existence. All the activities of man in life is planned under a roof hence their importance cannot be underestimated. The first positive intervention the Nigerian government had in housing was in 1971; when the National Council on housing was formed. This led to the National Housing Programme in 1972 and the establishment of the federal housing authority in 1973 to monitor the housing programme from the creation of the body to the establishment of the Nigerian Mortgage Bank (1956), till date, much was not achieved in the housing sector. For example, planning laws and regulations were not given adequate attention by both government and individual builders. In many cases, such laws were not even allowed to work at all. Many also find it easy to sidetrack government laws and regulations that it is now hard to believe the existence of such laws.Past housing policies'- were not that defective, but were rendered ineffective by a lack of strength on the part of the government. All these are caused by corruption of various magnitude (Kehinde, 2010).

When Nigeria got back on the democratic track in 1999, Chief Olusegun Obasanjo showed some commitment by impacting sanity in the political space and democratic terrain through the creation of commissions, agencies, bodies and the likes. These include National Economic Empowerment Development Strategies (NEEDS),Economic and Financial Crimes Commission (EFCC), Independent Corrupt Practices and other Related Offences Commission (ICPC), Monetisation Policy, Banking Reforms, Policy Towards Poverty

Reduction/Alleviation, SMEDAN, PAP, SMSE, etc. Privatisation Policy, Revitalisation of the National Agency for food and Drug Administration andControl (NAFDAC) and the likes.

The establishment of these bodies was aimed at ensuring a qualitative lifestyle and improved welfare of the masses. The formulation of these policies and programmes was laudable but the execution of most of these programmes ended in a fiasco because they were corrupt ridden (Omotoso, 2013). To buttress the diversion of policy meant for societal growth to that of self-development, Nigerian leaders used the Economic and Financial Crimes Commission (EFCC) in hunting political opponents thereby resulting in the enrichment of the anti-graft staff.

Nigeria's industrial policies, objectives and strategies are often subject to either modification or neglect or even total abandonment. In other words, industrial policies and practices are pursued on an ad-hoc basis and in a most uncoordinated manner (Ajayi, 2010). At no time has any government paid full attention to the issue' of housing in Nigeria. Even the colonial government neither articulated nor pursued a coherent housing policy. Even though various bodies have come together to bring up good ideas for good housing delivery in the country, such ideas have been thwarted by a lack of monitoring, lack of execution and implementation in many parts. Government insincerity and dishonesty do not allow her to enforce the operation and stability of the land used decree for even and rational distribution. Also, the government have been unable to moderate the financial values attached to land by individuals and families thereby extorting buyers (Kehinde, 2010).

In the same vein, Nigeria's economic policies were not developmental friendly either due to misappropriation of funds or diversion of proceeds of the policy which marred the eventual outcome. The Nigerian state at the outset is adjudged as a manipulated political economy with the negotiated political structure to serve, develop and sustain the existing pipeline for economic advancement and development of a more advanced industrial complex in Europe, a position that exists even at independence in October 1960. It is obvious that the economic atmosphere of the Nigerian state was dominated by educated Nigerian merchants and enlightened middlemen who used the sudden evacuation of foreign merchants from the Nigerian market to overtake and manipulate the market economy in determining the prices of export farm produce and putting pressure on the cost of imported goods, enriching themselves at the expense of the common man-farmers, traders and low-income earners without meaning government intervention or control (Salihu, Jadesola & Jubreel, 2012). The performance of the post-independence Nigerian economy manifested gross maladministration on the part of the Nigerian government which downplays the country's development.

Act of Corruption in Nigeria's Governance

In modern nation-states system, government policies are designed in every area that requires state political obligations and constitutional responsibility to the citizenry and the society. Important areas and critical sectors that cannot be abandoned in the political system include governing process, branches of government and the political institutions, the national economy, public finance, foreign relations and international diplomacy, defense, national security and social services. The menace of corruption by Nigerian leaders has certainly emerged as one of the main impediments to national development. Corruption by Nigerian leaders has caused the country severe losses economically, politically, and socially and these facts are responsible for decayed infrastructure, downturn of the economy, fragile

political institutions and steady decline in all indicators of national development.

There have been cases of official misuse of resources for personal enrichment. In spite of the abundant natural and human resources, the so-called Nigerian leaders have not only found it difficult to institute good governance and meaningful lifestyle for the citizens, they have also made living a normal life difficult for the average Nigerian because they championed the destruction of most of the commissions and agencies responsible for this purpose. The Halliburton bribery scandal was a monumental corrupt act which gross of Nigeria's leaders participated in. The most surprising aspect of the scandal was the participation of three successive former Nigerian leaders; late General Sanni Abacha, General Abdulsalami Abubakar and ironically, the founder of the Economic and Financial Crime Commissions (EFCC) Chief Olusegun Obasanjo. The trio were involved in the raging $180 million Halliburton bribery scandal which spans three continents- America, Europe and Africa. Chief Olusegun Obasanjo, his vice, Alhaji Atiku Abubakar, Gaius Obaseki and Funsho Kupolokun were alleged of $74 million USD. Late General Sanni Abacha was alleged of collecting $40 million USD and General Abdulsalami Abubakar got $37.5 million USD. Despite the involvement of these three former Nigerian leaders, the judicial net only caught the small fries. The Halliburton scam concerned the alleged payment of over $180 million to senior Nigerian officials, including, allegedly, past heads of state, by officials of an American firm, Halliburton, to secure a construction contract for a liquefied natural gas plant in Bonny Island in the Niger Delta. (Chigbo, 2010).

Table 1: Summary of Alleged Payments in Halliburton Bribery Scandal

S/N	Year of Payment	Alleged Amount	Suspected Beneficiary
1.	1994 - 1995	$40 Million USD	Late Gen. Sanni Abacha
2.	1996 - 1998	$2.5 Million USD	Chief Dan Etete
3.	1996 - 1998	$75,000 USD	M. D. Yusuf
4.	March / June 1998	$1,120,000 USD	1. Grety Overseas UK 2. Riser Brothers
5.	1998	$1,887,000 USD	Abdulkadir Abacha
6.	199 - 2000	$37.5 Million USD	1. Gen. Abdulsalam Abubakar 2. Chief Don Etiebet
7.	March 1999	$60,000 USD	1. Prince N. A. Bayero 2. Glosmer Int. (Riseer Brothers)
8.	March 1999	$290,000 USD	Edith Ununigbe
9.	March 1999	$600,000 USD	1. Zertash Malik 2. Grety Overseas (Risers Brothers
10.	1999 - 2000	$195,000 USD	1. Messr Shinkafi and Aliyu 2. Glosmer Int. (Riser Brothers)
11.	2001 - 2002	$74 Million USD	1. Chief Olusegun Obasanjo 2. Atiku Abubakar 3. Gaius Obaseki 4. Funsho Kupolokun
12.	2001 - 2002	$5 Million USD	1. Bodunde Adeyanju
13.	2001 - 2002	$11,700,000 USD	1. Ibrahim Aliyu 2. Abdullahi D. Bello 3. Urban Shelter 4. Intercellular
14.	2001 - 2002	$3,108,675 USD	1. M. G. Bakare
	Total	**$178,575,675 USD**	

Source: Newswatch, May 2010, 51 (20) pg.42

Instrument of Checkmating Leadershipby the Electorates to Ensuring Effective Social Policies

Government is expected to be participatory because it is a two-way thing. Firstly, the electorates gave the leaders their mandate and the leaders are expected to reciprocate through the protection of lives and properties cum good governance. Ijewereme and Dunmade (2014) noted that the extent of development of any nation globally is often been determined by the quality and selfless nature of its leaders. However, when there is a culture of impunity in a society and there is a widespread lack of leadership by example to enthrone transparent and qualitative public bureaucracy, degenerated symptoms of underdevelopment continue to manifest as exemplified in Nigeria's public administration. The manifestation of symptoms of underdevelopment does not imply Nigeria lacks quality and competent human resources to engender development, but the process of enthroning leaders is bedeviled by crisis and it does not provide room for morally upright, competent, visionary leaders to emerge.Ineffective leadership and corruption according to Egbegbulum (2012) have impacted negatively Nigeria's democratic stability and economic development.

The Nigerian society has never been well-governed because of leadership crisis and insincerity of purpose since independence in 1960. The persistency of corruption which erodes the social and economic values of Nigeria and the level of its exhibition by the Nigerian leaders manifest their insincerity. The major problem with Nigerian constitution is its inability to punish leaders that refused to lead by practical good example. That is why Rotimi, Obasanju, Lawal and Iseolorunkanmi (2013) posited that Nigeria must be one of the very few countries in the world where a man's source of wealth is of no concern to his neighbours, the public or the government.Wealthy people who are known to be corrupt are regularly courted and honoured by communities, religious bodies, social clubs and other private organizations.If maladministration would be curbed in governance, the electorates should be allowed to participate especially in checkmating the excesses of the leaders through the initiative, referendum and recall. The initiative is a means of overcoming the inaction of the legislative body, or its refusal to pass certain laws for which there is popular demand. The initiative allows the citizens an opportunity to force the hands of the legislators or even for the citizens to pass the kinds of laws they want.

The referendum is a device to ensure that certain laws or major changes in the constitution do not go into effect without the expressed permission of the citizens. It is like an election in which citizens vote for or against a specified issue. A referendum may be used sometimes merely to establish the wishes of the citizens. The recall as the name suggests is a process through which the electorates can call back their representative in whom they have lost confidence. In other words, by a popular vote the elected official would be dismissed from office even before his term of office has elapsed (Dare & Oyewole, 2002). In this vein, if the Nigerian leaders are cognizant of the functionality of these democratic instruments, their insincerity and corruption in governance will be well checkmated.

Conclusion

This paper has justified that the leaders who are drivers of the national accord status to the country and the status they accord is based on their driving pattern. If they are honest and prudent with policies implementation, it would translate into development. Holistic implementation of policies actualizes the growth and development of the citizenry and society. The only thing required of the government (leaders) is to convert the power, authority and legitimacy accorded them by the electorates to positive use. This will enable

the government to cater more for the citizens through policy execution. This testifies to the assertion that the major means of evaluating the level of civilization and civicness of modern political systems is the level and extent to which they are well organized and the citizenry well catered for (Omotoso, 2010). Finally, for social policies to translate to development, the Nigerian constitution must be reviewed so that the masses whom the policies are meant to benefit would be fully involved in the implementation from the commencement to the conclusion of the policy implementations.

Recommendations

For Nigeria to achieve development through policy implementation, the following recommendations will assist the course:

1. The masses should participate in the implementation of policies meant for their welfare.
2. Release of policy actualization fund should be in stages and representatives of the masses must be aware of the processes.
3. Immunity clause should be removed from all political office holders so that whoever embezzles public funds should be made to face the music at that particular point in time.
4. Contractors handling projects attached to policy implementations must be strictly monitored by both the government and the governed.
5. There must be a periodic evaluation of policies so that the targeted development it is meant to midwife in the society is achieved.
6. There should be strict enforcement of the rule of law on all defaulters of the process of policies metamorphosis into development irrespective of social status.
7. Projects attached to policies should be completed within a timeframe so as to forestall an increase in the project cost.

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TEXTBOOK UTILIZATION AS PREDICTOR OF ACADEMIC ACHIEVEMENT IN BASIC SCIENCE AND TECHNOLOGY IN LOWER PRIMARY SCHOOLS IN SOUTHWESTERN, NIGERIA

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Abstract
The study investigated the relationship between textbook utilization pupils' academic achievement in Basic Science and Technology (BST) in Southwestern, Nigeria. A correlational survey research design was adopted for the study. The population consisted of all lower primary III pupils in Southwestern, Nigeria. The sample size of the study was made up of 810 primary III pupils. Multistage Sampling Procedure was used to select the sample for the study. Simple random sampling technique was used in selecting three states out of the six states in Southwestern geographical zones of Nigeria. One Local Government Area (LGA) was selected from each of the three senatorial districts in the selected Southwestern states using simple random sampling technique making a total of 9 LGAs. Three primary schools were selected from each LGA using simple random sampling technique making a total of 27 schools. Two self-designed instruments were used to collect data for the study, they were Questionnaire on Pupils Utilization of Basic Science and Technology Textbooks (QPUBSTT) (it measures how pupils used Basic Science and Technology Textbooks) and Basic Science and Technology Achievement Test (BSTAT) (measures academic performance of pupils in Basic Science and Technology). Data were analyzed using Analysis of Variance (ANOVA), Post- Hoc Analysis, Pearson Moment Correlation and Descriptive Analysis. The results showed a significant relationship between textbooks utilization and pupils` achievement in BST in Southwestern, Nigeria ($F=155.706$, $p<0.05$). The results revealed that there was significant relationship of the combined influence of textbook utilization and gender on pupils` achievement in BST in the study area ($R = 0.406$; $p<0.05$). The results also showed no significant relationship on the combined influence of textbooks utilization and school type on pupils` achievement in BST in relation to gender in the study area ($R = 0.436$; $p<0.05$).The study concluded that textbooks utilization is capable of predicting lower primary school pupils` achievement in Basic Science and Technology.

Keywords: Textbook Utilization, Class Achievement, Basic Science, Technology

Introduction

Education is the bedrock for the growth of any developed nation of the world and also a means of acquiring growth in all ramifications including science, economy and technology. One of the major interests of government across the world includes the commitment to providing quality education and training. In year 2003, the National Policy on Education, considered training a child to be a top instrument that can bring about the materialization of change and development for individual entities and for the nation as a whole. Thus, the envisioned development is planned to become visible through a properly designed and well executed curriculum at all stages of education with special emphasis on the primary stage of education because this forms the basis for all other stages of child education.

Primary education gets the child ready for life beyond the four walls of the classroom. It enhances the skill sets of the child most especially as regards numeracy and literacy. Primary education exists as the bedrock of formal schooling. It has evolved to exist as a fundamental piece of the instructive framework across the globe. Moreover, advancement into other stages of education can only be guaranteed when an individual has successfully passed through the primary school education. Thus, primary school education is a premise whereupon other educational stages are built. In 2004, the National Policy on Education, declared education at the primary level as the apparatus for national development needed to enhance individual development for advanced learning as well as the holistic development of the society and fair access to education among the children. The role of primary education is to provide a basis for further education at higher levels, so as to ensure that there is no problem at subsequent levels.

Science is the knowledge about the physical or natural world based on facts that can be experimentally proven. It is also the combination of human efforts to understand the antecedence of the world of nature. Science can be regarded as a continuous search for explanation of the natural phenomena (Oni, 2008). For a nation to develop, more attention must be given to science education especially at the elementary stage in order to lay the basic foundation for its development (Oloyede, 2009).

Early Childhood Education is a type of education that is given right from birth till age eight within Nigerian context. It is so crucial, as it is the basic educational level that children from birth to eight (0 - 8yrs) are exposed to. Childhood education is as old as man and there is keen interest in how children learn and in what they learn. Childhood is a time of incredible development and growth from cognitive, social, physical, emotional and psycho-social development, it is the formative period of a child life, when development is very rapid, children at this stage of development are largely influenced by their environment and hence the need for a flourishing environment in order to make this stage remarkable.

Early childhood education is commonly conceived to be a pre-school, or rather an extension of semi-formal education beyond the four walls of the home (Aliyu, Okolie, Onifade & Osho, 2014). Primary education captures the levels of education such as the crèche, nursery and kindergarten (Akinbote, 2006). The programme was presented to pupils from birth to 5 as expressly provided in the 2014 National Policy on Education of the Federal Republic of Nigeria. The effort to design Early Childhood Education (ECE) in a purposeful, appropriate and effective manner is the responsibility of all and sundry but the greatest of this is on the government of a given state (Aber, Behrman & Wolf, 2017). Parents are expected to ensure that the children gain access to school while they also co-work with the school. Similarly, the society is supposed to make constant provisions for resources while the teachers are supposed to expedite the development of the children. However, these strategies can only be successful if the government partners with the relevant stakeholders while it gives the framework needed for the execution of this level of education (Kabay, Wolf & Yoshikawa, 2017). A huge piece of the work plan is the vital approach to guarantee consistence, authorization, and simplicity of execution of the programme.

Textbooks are vital tools essential for training and learning of BST to improve teacher's ability and promote pupils' academic performance. Learning is made more pragmatic, interesting and exciting with the engagement of textbooks. The utilization of textbooks also enhances both the teachers and pupils' participation in such an active and effective manner in the classroom. It also aids skill acquisition and enhancement of self-actualization and self-confidence. According to Ibeneme (2000), textbook can be explicated

to be a material used by the teacher for practical exhibition in the class. Similarly, Ikerionwu (2000) averred that textbooks are tools that assist the teacher in logically presenting lessons in the class. Equally, Fadeiye (2005) considered textbooks to be visual and concrete tools with which teachers improve the nature of and teaching and learning activities in Basic Science and Technology.

There are some factors which teachers must consider in selecting BST textbooks for pupils and these are the suitability and quality of the material, its content, level of vocabulary as well as the ethnic and gender tendencies. Thus, as soon as the chosen textbooks are utilized effectively in the classroom, the academic achievement of the pupil will be affected positively. Contributions in extant literature as it pertains to the accessibility and deployment of textbook has largely influenced the investment of several governments, philanthropic organizations and donor community in education. Some educational scholars have found that effective use of textbooks by both teachers and pupils is among the schools' conditions that affects the achievement of academic performance of pupils in primary schools.

Meanwhile, in establishing the grade level for which a pupil is prepared for, achievement tests scores are considered. Oyedele (2017) studies the effect of resources on the academic performance of learners, as he carried out his research on school children. Also, in 2010, Afolabi and Adeleke acknowledged the non-accessibility, non-utilization and insufficiency of textbooks as factors responsible for pupils' non-participation in the classroom. Stephen (2013) had also studied the utilization of educational materials on pupils' support in science classroom in preschool. However little or no work has been carried out on textbook utilization and class participation among primary pupils since most of the researchers carried out their studies on instructional materials in school children. Likewise, it has been reported that the performance of pupils in BST being one of the compulsory subjects taught in lower primary schools continues to dwindle from year to year (Adeyemi, 2008).The importance attached to science by the State and Federal governments in Nigeria has been clearly stated in section five of the National Policy on Education (2014) sub-section thirty-nine of this part read as follows: 'University and other levels of education would be needed to give better attention to the improvement of scientific programme.

Low level of achievement of pupils has been the concern of stakeholders and researchers in education. This might be linked to poor implementation of the curriculum content, lack of qualified teachers and practical work, inappropriate teaching methods and lack of textbooks by pupils among others. Evidence has shown that effective and efficient utilisation of textbooks in classroom activities are effectively employed in the improvement of learning in school children. It is therefore necessary to examine variable such as textbook utilization as it affects pupils' performance in BST at the lower elementary school level.

Statement of the Problem

Basic Science and Technology (BST) is among one of the compulsory subjects taught at the lower primary schools. Its effective teaching involves textbook utilization which has to do with the extent to which pupils make use of recommended textbooks within and outside BST classroom. Not only that, the involvement of pupils in teaching and learning activities which is textbook utilization cannot be de-emphasized. However, the need for effective administration of instructional materials to promote functional and quality education has been the one of the specific targets of the educational system in the country. Studies have shown that primary pupils' performance in BST is declining and many reasons have been implicated as the causal factors of this outrageously low academic outcome.

Evidence has shown that effective and efficient utilization of textbooks in classroom activities are effectively employed in the improvement of performance in school pupils. However, little information is available on the effects on BST at the primary school level based on gender and school type. It is therefore necessary to examine variable such as textbook utilization as it affects pupils' performance in Basic Science and Technology at the lower primary school level, hence this study.

Purpose of the Study

The aim of the study is to investigate how textbook utilization affect academic performance of lower primary school pupils in Basic Science and Technology in Southwestern, Nigeria.

The specific objectives of this study are to:

i. determine the relationship between textbooks utilization and pupils' achievement in Basic Science and Technology in Southwestern, Nigeria;

iii. examine the combined influence of textbook utilization and gender on pupils' achievement in Basic Science and Technology in the study area; and

iv. investigate the combined influence of textbook utilization and school type on pupil's achievement in Basic Science and Technology in the study area.

Hypotheses

The following hypotheses were generated for the purpose of this study:

$H_0$1 There is no significant relationship between textbooks utilization and pupils' achievement in Basic Science and Technology in Southwestern, Nigeria.

$H_0$2 There is no significant combined influence of textbook utilization and gender on pupils' achievement in Basic Science and Technology in the study area.

$H_0$3 There is no significant combined influence of textbook utilization and school type on pupil's achievement in Basic Science and Technology in the study area.

Methodology

The study adopted a correlational survey research design, the independent variable (textbook utilization) was used to present science concept to lower primary pupils in Southwestern, Nigeria. The efficiency on pupil's performance was measured while the dependent variable was academic achievement in science. Correlation survey research design was used to determine the extent to which two or more variables are related among a single group of pupils. The population for the study comprised all primary III pupils in Southwestern, Nigeria. Both male and female primary three school pupils were involved in the study. The southwestern States covered in the study are Ekiti, Oyo and Ondo states. The sample for the study comprised 810 primary three pupils. Multistage sampling procedure was used to select the sample for the study. Simple random sampling technique was used in selecting three states out of the six states in the southwestern geographical zones of Nigeria, one Local Government Area (LGA) in each state was selected from three senatorial districts per state in all the three states making 9 local governments areas. Three primary schools were selected from each LGA using simple random sampling technique making a total of twenty-seven schools. Two self-designed and validated instruments were used to collect data for this study are as follows:

1. Questionnaire on Pupils Utilization of Basic Science and Technology Textbooks (QPUBSTT)

2. Basic Science and Technology Achievement Test (BSTAT)

Questionnaire on pupils' utilization of Basic Science and Technology Textbook (QPUBSTT). The instrument was used to inspect how pupils utilize basic science and technology textbooks. The instrument was divided into two sections A and B. Section A was made up of the demographic data of pupils in primary III. These data include; gender, the child's age and the child' class. Section B addressed pupils' level of textbook utilization in BST. The instrument was used to inspect the textbook of the selected pupils alongside with the class note. The Basic Science Achievement test is a standardized test/questions which contain 20-multiple choice items based on three different topics taught by their teachers during the research work. The topics are classes of food, functions of food and balanced diet. This instrument was used to measure pupils' academic achievement in Basic Science and Technology class.

The content and construct validity of instruments were established by experts in ECE and test development respectively. The three instruments were trial tested on 30 pupils outside the scope of the study, their responses to the items were used to determine the reliability of the instruments. The reliability coefficient for each section on Pupils Utilization of Basic Science and Technology Textbooks (QPUBSTT) was determined using Cronbach Alpha, 0.700. Basic Science Achievement Tests (BAT) yielded a reliability of 0.721 indicating that the instruments are reliable for the study. The data collected from the respondents were sorted and analyzed using frequency counts, simple percentages and regression analysis.

Results

Hypothesis One: There is no significant relationship between textbooks utilization and pupils' achievement in Basic Science and Technology in South Western Nigeria.

In In order to test this hypothesis, data collected on pupils' textbook utilization and achievement in Basic Science and Technology were subjected to regression analysis and the results are presented in Table 1.

Table 1: Regression Analysis of the Relationship between Textbook Utilization and Pupils' Achievement in Basic Science and Technology in South Western Nigeria

Model	Sum of Square	df	Mean Square	F	Sig.	Remark
Regression	2958.356	1	2958.356	155.706	.000	Significant
Residual	15351.713	808	19.000			
Total	18310.069	809				

($F = 155.706, p < 0.05$)

Dependent Variable: Pupils' Achievement Test

Predictors: (Constant); Textbooks Utilization

Results in Table 1 showed that there was significant relationship between textbooks utilization and pupils' achievement in Basic Science and Technology in South Western Nigeria ($F = 155.706$, $p < 0.05$). Thus, the null hypothesis that stated that there is no significant relationship between textbooks utilization and pupils' achievement in Basic Science and Technology in South Western Nigeria is hereby rejected. The result implies that textbooks utilization was a predictor of pupils' achievement in Basic Science and Technology in the study area.

Hypothesis Two: There is no significant of combined influence of textbook utilization and gender on pupils' achievement in Basic Science and Technology in Southwestern, Nigeria.
In order to test this hypothesis, data collected on pupils' textbook utilization, class participation and achievement in Basic Science and Technology in relation to gender were subjected to regression analysis and the results are presented in Table 2.

Table 2: Regression Analysis of Combined Influence of Textbooks Utilization and Gender on Pupils' Achievement in Basic Science and Technology in Southwestern Nigeria

Model	Unstandardized Coefficients		Standardized Coefficients	T	Sig.
	B	Std. Error	Beta		
(Constant)	7.329	0.551		13.308	.000
Textbooks Utilization	1.391	0.160	0.391	8.690	.000
Gender	-0.543	0.311	-0.056	-1.744	.082

$R = 0.406$, $R^2 = 0.165$, Adj. $R^2 = 0.162$, Estimated Standard Error = 4.356
Dependent Variable: Pupils' Achievement Test
Predictors: (Constant); Textbooks Utilizationand Gender.

Results in Table 2 showed that there was significant combined influence of textbooks utilization and gender on pupils' achievement in Basic Science and Technology in Southwestern, Nigeria ($R = 0.406$; $p < 0.05$). Therefore, the null hypothesis that states that there is no significant combined influence of textbooks utilization and gender on pupils' academic achievement in Basic Science and Technology in Southwestern Nigeria is hereby rejected. The results implied that pupils' textbooks utilization was a predictor of students' academic achievement in Basic Science and Technology. Textbooks utilization ($\beta = 0.391$; $t = 8.690$; $p < 0.05$) was significantly dependent predictor of pupils' academic achievement in Basic Science and Technology however, gender ($\beta = -0.056$; $t = -1.744$; $p > 0.05$) was significantly not a predictor of pupils' achievement in Basic Science and Technology in the study area.

Hypothesis Three: There is no combined influence of textbook utilization and school type on pupil's achievement in Basic Science and Technology in the study area.

In order to test this hypothesis, data collected on pupils' textbook utilization, class participation and achievement in Basic Science and Technology in relation to school type were subjected to regression analysis and the results are presented in Table 3.

Table 3: Regression Analysis of Combined Influence of Textbooks Utilization and School Type on Pupils' Achievement in Basic Science and Technology in the study area

Model	Unstandardized Coefficients		Standardized Coefficients	T	Sig.
	B	Std. Error	Beta		
(Constant)	8.779	0.534		16.425	.000
Textbooks Utilization	1.353	0.158	0.381	8.582	.000
School Type	-1.707	0.320	-0.170	-5.330	.000

$R = 0.436$, $R2 = 0.190$, Adj. $R2 = 0.187$, Estimated Standard Error = 4.289
Dependent Variable: Pupils' Achievement Test
Predictors: (Constant); Textbooks Utilization and School Type.

Results in Table 3 showed that there was significant combined influence of textbooks utilization and school type on pupils' achievement in Basic Science and Technology in Southwestern, Nigeria ($R = 0.436$; $p < 0.05$). Hence, the null hypothesis that states that there is no significant combined influence of textbooks utilization and school type on pupils' achievement in Basic Science and Technology in Southwestern, Nigeria is hereby rejected. The results implied that pupils' textbooks utilizationand school type were predictors of their academic achievement in Basic Science and Technology. Textbook's utilization ($\beta = 0.381$; $t = 8.582$; $p < 0.05$)and school type ($\beta = -0.170$; $t = -5.330$; $p < 0.05$) were significantly dependent predictors of pupils' academic achievement in Basic Science and Technology in the study area.

Discussion of Findings

The result of the findings also showed that the relationship between Textbook Utilization and Pupils` Achievement in Basic Science and Technology in Southwestern, Nigeria is significant which corroborates the findings of Meziebo*et al* (2008) that Textbook Utilization is very vital in basic science and technology teaching-learning process such that when teaching is effectuated with textbooks much learning takes place and there is a better chance of success in achieving lesson objectives. But when teaching is done without the use of textbook, learning may look dull and too theoretical to students. According to Cimmina (2007), class participation is important because learning is not just between the pupils and the teachers, but part of the whole classroom experience, she believes that when pupils participate in class, they learn from each other and internalize the knowledge better. In line with the study, Wanjiku (2013), in the study on availability and utilization of school resources found out that, in spite of differences in school categories, there were similarities in students' utilization of the available text books. Ways in which students utilized textbooks included; personal reading where students carry out individual studies, discussing in groups, note writing and usual class reading. Chepchieng and Kibbossa (2005) agreed with this view where he notes that adequate and quality textbooks in secondary schools are highly correlated with students' achievement among students from a lower socio-economic background. Results of the study further revealed that there were significant combined influence of textbooks utilization, gender, and school type on pupils' achievement in Basic Science and Technology in Southwestern, Nigeria according to the study.

Conclusion

The study concluded that lower primary school pupils' academic achievement can be predicted by textbook utilization in Basic science and Technology in Southwestern, Nigeria.

Recommendations

Based on the findings of the study, the following recommendations were therefore suggested to further promote children learning and achievement:

1. Teachers should ensure that they make use of recommended Textbooks in Basic Science and Technology in teaching the pupils.
2. Parents should be ready to give quality attention to the learning of the children since pupils at this stage are not yet mature to make some certain significant decision as regard their learning.

3. Government being major stakeholders in education should ensure the provision of learning facilities that could make the learning environment conducive in school,
4. Teachers should be motivated and updated on how to make teaching-learning interesting irrespective of the subject matter.
5. Education remains the bedrock of development in any country, government should make the achievement of standard education her priority.

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EFFECT OF CONCRETE-REPRESENTATIONAL-ABSTRACT ON PUPILS' ACADEMIC PERFORMANCE IN NUMERACY IN MORO LOCAL GOVERNMENT AREA, KWARA STATE, NIGERIA

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Abstract

*The study examined the effects of concrete-representational-abstract on pupils' academic performance in numeracy in Moro Local Government Area, Kwara State. The researcher adopted pre-test, post-test, non-equivalent control group quasi-experimental research design. The population comprised all primary school pupils in Moro Local Government. Three public and three private primary three classes were sampled. Three instruments were used for this study. Instructional Guide on Concrete-representational-abstract (IGCRA)**,** Instructional Guide on Conventional Teaching Method (IGCTM) and Test on pupils' Numeracy Academic Performance (TPNAP). Seven research hypotheses were formulated and tested at 0.05 level of significance. Data were analysed using the Analysis of Co-Variance (ANCOVA). The findings of the study revealed that there was significant main effect of treatment on pupils' academic performance in numeracy ($F_{(1; 64)} = 76.186; P < 0.05$). There was no significant main effect of gender on pupils' academic performance ($F_{(1; 64)} = 0.001; P > 0.05$There was no significant main effect of school type on pupils' academic performance in numeracy ($F_{(1; 64)} = .651; P > 0.05$).There was no significant interaction effect of treatment and gender on pupils' numeracy academic performance ($F_{(1; 64)} = .245; P > 0.05$). There was no significant interaction effect of treatment and school type on pupils' numeracy academic performance ($F_{(1; 64)} = .856; P > 0.05$).There was no significant interaction effect of gender and school type on pupils' numeracy academic performance ($F_{(1; 64)} = 1.225; P > 0.05$). There was no significant interaction effect of treatment, gender and school type on pupils' numeracy academic performance ($F_{(1; 64)} = .796; P > 0.05$). The study concluded that concrete-representational-abstract could be adopted for teaching Numeracy to improve academic performance at the primary school level. Based on the findings of the study, was recommend that adoption of this strategy should be made for teaching numeracy*

Key words: Concrete-Representational-Abstract,Academic Performance

Introduction

The goals and objectives of teaching and learning in a classroom is to bring about a desirable change in learners which could be in terms of knowledge and behaviour. This change is possibly determined through the extent of the pupils' performance on learning activities. Based on personal experience, the selection of teaching and learning method will determine the effectiveness of the academic performances of pupils in numeracy. However, there is the need to verify the appropriateness of selected approach by the teacher before lesson. Numeracy is the basis for Science and Technology as well as a tool for achieving

scientific and technological development. Numeracy is one of the elements of education. Akinoso (2013) opined that Numeracy is a field of Science which is a means of thinking and communicating; a tool to solve various practical problems, whose elements are logic and intuition, analysis and construction, generality and individuality, while it has branches such as arithmetic, algebra, geometry, and analysis. Supandi, Waluya, Suyitno and Dewi (2018) stated that Pupils who are able to represent mathematical idea correctly have a good understanding of the mathematical concept. Thus, numeracy can be represented through the use of visual objects, for instance, charts, diagrams, tables, and sketches/drawings and non-visually for instance mathematical equations and models. Purwadi, Sudiarta & Suparta (2019) viewed that Presentation of fractions in a simple form makes it easier for pupils to understand teaching and learning and problem-solving and innovation, location, gender and technology influence academic performance of pupils in numeracy

Poor pupils' numeracy academic performance was also evident in one of Adeyemi's (2011) submission. While comparing students' academic performance in public examinations in Osun and Ekiti States of Nigeria, Adeyemi found low pupil academic performance in numeracy and integrated science during the years under review.

Pupils' academic performance may be improved through the use of Concrete, Representational and Abstract (CRA). Concrete, Representational and Abstract (CRA) is a sequential instructional approach during which students move from working with concrete materials to creating representational drawings to using abstract symbols (National Mathematical Advisory Panel, 2008). Using this CRA sequence helps the pupils to develop thorough mental representations that are foundational for conceptual understanding. The *CRA has* three parts of instructional strategy that builds pupils' conceptual understanding by explicitly teaching meaningful connections from hands on manipulatives, to representational pictures, to abstract concepts and symbols. (National Mathematical Advisory Panel, 2008).

The initial instructional stage of CRA is the “doing” stage where pupils learn to use hand-on manipulatives to practice numeracy concepts. This stage includes visual, tactile and kinesthetic modalities (Witzel, Riccomini, & Schneider, 2008). The second stage in CRA: the “seeing” stage where pupils learn and practice numeracy using pictures to represents objects to model the concepts (Access Center, 2004). The final instructional stage in CRA is the “symbolic” stage, where pupils learn to use numbers and abstract symbols to model numeracy concepts (Access Center, 2004).

Concrete-Representational-Abstract Instructional Strategy may enhance pupils' achievement in numeracy where teaching move gradually from concrete to representational then abstract level. Witzel (2005) opined that CRA as a three-staged learning process where pupils learn through physical manipulation of concrete objects in the first stage, followed by learning through pictorial representations of the concrete manipulations in the second stage and ending with solving problems using abstract notation, numbers and symbols in the third stage. According to Haley (2016), CRA instructional strategy stresses the importance of beginning the instruction of new mathematical concepts with concrete lessons before moving to abstract representations. The CRA method of instruction can help pupils build a deep conceptual understanding of subtraction concepts involving regrouping, provided they are given clear demonstrations and models as well as enable them have extensive practice opportunities for newly learned skills (Mancl, Miller & Kennedy, 2012). The academic performance of children can be improved when they learn through the use of concrete and manipulative method.

Bronfenbrenner (2005) stated that gender possesses some characteristics which allow the researcher to be able to get accurate result. It is a variable to be considered in any research work in order to get a meaningful result. Gender differs and varies within and across cultures overtime; results in different roles; responsibilities, opportunities, needs and constraints for women, men, boys and girls. Kamla-Raj (2009), in his study of pupils performance in Junior Secondary in mathematics, found out that pupils' poor performance in numeracy in Junior Secondary School examination was high: male pupils performed better than female; pupils from rural schools performed better than pupils from urban schools in numeracy; and pupils from private schools performed better than pupils from public schools. Oginni (2009) asserted that male pupils performed better than their female counterparts in numeracy laboratory lessons.

Musa and Hartley (2015) reported a significant relationship between thrichotomous achievement goals and academic performance of pupils in English and overall academic performance in Borno State. The males performed significantly better than females in English Language and overall academic performance but there is no gender difference in numeracy performance. Furthermore, there is significant effect of gender on pupils' learning goal orientation in favour of males, whereas there are no gender effects on performance approach and performance-avoidance goals orientation of pupils (Musa, Dauda & Umar, 2016).

Gender differences in numeracy performance began to appear at the upper primary school level and increase in secondary schools. These differences are caused by reciprocal-action of many factors within and outside the school as well as by the pupils' background. Many studies showed gender performance numeracy, with females performing significantly worse than males. However, such views were not unanimously shared with other research demonstrating no differences (Lindberg, Hyde, Linn & Petersen, 2010; Scafidi & Bui, 2010). Studies also portrayed that gender has a significant effect on maths-based, affective variables that predict numeracy, particularly anxiety and confidence, with females demonstrating much stronger negative effect compared to males (Durrani & Tariq, 2009; Kargar, Tarmizi & Bayat, 2010).

School type should not be overemphasized, as the name implies, Public and private schools are institutions owned by government and private. The public schools in Nigeria own by the Federal, State, and Local Governments as their proprietors while the private schools are owned by individuals, associations or private organizations. Berkeley Parent Network (2009) asserted that private schools vary widely and level of parental involvement varies from one private school to the other. Parents pay for the cost of educating their children in private schools, thus, they tend to be more involved in dictating what the schools offer than parents whose children are attending public schools (Olatoye & Agbatogun, 2009). There was a significant difference in numeracy and science achievement of public and private school pupils in which private school pupils performed better than public school counterparts in numeracy and science in public and private schools (Olatoye & Agbatogun, 2009).

There was significant difference in mathematics and science achievement of public and private school pupils in which private school pupils performed better than public school counterparts in mathematics and science. The discussions so far show that there is a need to compare private and public school student's performance in science (Olatoye & Agbatogun 2009). Therefore, this study examined whether the teaching through the use of concrete representational abstract explicitly enhance pupils' academic performance in numeracy

taking gender and school-type into consideration.

Statement of the Problem

Numeracy plays a significant role in this modern age of science and technology which enables us to understand how to solve real life problem on daily basis, yet, pupils are not performing well in the subject. Studies have shown that pupils have poor academic performance in numeracy. During the researcher's teaching practice in the year 2016, most pupils found it difficult to answer some of the numeracy questions. A Report from Kwara State Ministry of Education showed that more than 60 percent of pupils who took the Junior Secondary School Common Entrance Examination in the year 2020 scored less than 50 percent. It shows that pupils have negative attitude towards learning numeracy which could be as a result of principle and practice being used by numeracy teachers. The poor academic performance of pupils in numeracy at this level is a source of concern to all educational stakeholders since its one of the major subjects at the primary school level. More so, it is the bedrock of technological advancement of any nation.

Based on the level of performance of pupils in numeracy in Nigeria, precisely in Moro Local Government Area, it is clear that pupils have low grade in numeracy. This could be as a result of the teaching strategy being used by numeracy teachers. Concrete-representational-abstract involves sequential instructional approach which depicts how pupils work with concrete materials, create representational drawings, to use abstract symbols. This processes may help pupils to be actively involved in classroom activities. However, to the best of researcher's knowledge teaching of numeracy has not explore these strategies in Kwara State, specifically in Moro Local Government primary schools. Based on the above, the researcher intends to find out the effect of concrete representational abstract (CRA) on primary school pupils' academic performance.

Purpose of the Study

The main purpose of this study was to determine the main effect of concrete representational abstract on pupils' academic performance in numeracy in Moro Local Government Area of Kwara State.

The specific objectives of the study are to:

1. examine the main effect of gender on pupils' academic performance in numeracy in Moro Local Government Area of Kwara State.
2. investigate the main effect of school-type on pupils' academic performance in numeracy in Moro Local Government Area of Kwara State.
3. assess interaction effects of treatment and gender on pupils' numeracy academic performance in Moro Local Government Area of Kwara State.
4. determine the interaction effect of treatment and school-type on pupils' numeracy academic performance in Moro Local Government Area of Kwara State.
5. examine interaction effect of gender and school-type on pupils' numeracy academic performance in Moro Local Government Area of Kwara State.
6. determine the interaction effect of treatment, gender and school-type on pupils' numeracy academic performance in Moro Local Government Area of Kwara State.

Hypotheses

The following null hypotheses were formulated and tested at 0.05 level of significance for the study.

H_o1: There is no significant main effect of treatment on pupils' academic performance in numeracy in Moro Local Government Area of Kwara Stat

H_o2: There is no significant main effect of gender on pupils' academic performance in numeracy in Moro Local Government Area of Kwara State.

H_o3: There is no significant main effect of school-type on pupils' academic performance in numeracy in Moro Local Government Area of Kwara State.

H_o4: There is no significant interaction effect of treatment and gender on pupils' numeracy academic performance in Moro Local Government Area of Kwara State.

H_o5: There is no significant interaction effect of treatment and school-type on pupils' numeracy academic performance in Moro Local Government Area of Kwara State.

H_o6: There is no significant interaction effect of gender and school-type on pupils' numeracy academic performance in Moro Local Government Area of Kwara State.

H_o7: There is no significant interaction effect of treatment, gender and school-type on pupils' numeracy academic performance in Moro Local Government Area of Kwara State.

Methodology

The study adopted pre-test, post-test, nonequivalent control group quasi-experimental research design. A factorial design of 2X2X2 was adopted. The population for this study comprised all primary three pupils (three private and three public schools) in Moro Local Government Area of Kwara State.

Simple random sampling was used to select four primary schools. Stratified sampling technique was used to select two public schools and two private schools. Purposive sampling technique was used to select schools that have both genders. Classes were assigned to two experimental groups and two control groups. Intact classes were used to avoid disruption of classes. Sample size comprised 73 primary school pupils. Instructional Guide on Concrete-representational-abstract (IGCRA), Instructional Guide on Conventional (Traditional) Teaching Method (IGCTM) and Test on pupils' Numeracy Academic Performance (TPNAP) were used to elicit information from respondents. Instruments were validated by three lecturers in the department of Early childhood and primary Education and the reliably tested at 0.75. Data were analysed using frequency, percentage and Analysis of Co-variance (ANCOVA) at 0.05 level of significance. The ANCOVA considered appropriate because of pretest and posttest.

Results

Hypothesis One: There is no significant main effect of treatment on pupils' academic performance in Numeracy in Moro Local Government Area of Kwara State, Nigeria

Table 1: Summary of Analysis of Covariance showing the Main Effects of Treatment on

Source	Type III Sum of Squares	df	Mean Square	F	Sig.
Corrected Model	418.965a	4	52.371	20.718	.000
Intercept	470.317	1	470.317	186.063	.000
Pretest	5.486	1	5.486	2.170	.146

Source	Type III Sum of Squares	df	Mean Square	F	Sig.
Treatment	192.578	1	192.578	76.186	.000
Gender	.002	1	.002	.001	.976
School type	1.645	1	1.645	.651	.423
Treatment * Gender	.620	1	.060	.245	.622
Treatment * School type	2.163	1	2.163	.856	.358
Gender * School type	3.096	1	3.096	1.225	.273
Treatment * Gender * School type	2.013	1	2.013	.796	.375
Error	161.775	69	2.528		
Total	16235.000	74			
Corrected Total	580.740	73			

Table 1 shows the main effect of treatment on pupils' academic performance in Numeracy. There was significant main effect of treatment on pupils' academic performance in Numeracy ($F(1; 64) = 76.186$; $P < 0.05$). The hypothesis is therefore rejected in the light of the result since the significant value (.000) is less than 0.05. This implies that treatment had significant effect on pupils' academic performance in Numeracy. Table 2 revealed the sources of the difference in pupils' academic performance in Numeracy.

Table 2: Summary of Bonferroni's Post Hoc pairwise Comparison of the scores within the three Groups

Treatment	Mean Score	Experiment 1	Control Group
Concrete Representation Abstract Strategy	16.05	*	
Conventional Method	10.39		*

Table 2 revealed that the significant main effect exposed by table 1 is as a result of the significant difference between:

i. Concrete Representational Abstract Strategy
ii. Conventional method

This implies that those exposed to Concrete Representational Abstract Strategy (Mean = 16.05) performed significantly better than those exposed to conventional method (Mean = 10.39).

Hypothesis Two: There is no significant main effect of gender on pupils' academic performance in numeracy in Moro Local Government Area of Kwara State.
Table 1 also revealed the main effect of gender on pupils' academic performance in numeracy. There was no significant main effect of gender on pupils' academic performance in numeracy ($F_{(1; 64)} = .001$; $P > 0.05$). The hypothesis is therefore not rejected in the light of the result since the significant value (.976) is greater than 0.05. This implies that gender had no significant effect on pupils' academic performance in numeracy.

Hypothesis Three: There is no significant main effect of school type on pupils' academic performance in numeracy in Moro Local Government Area of Kwara State.
Table 1 also revealed the main effect of school type on pupils' academic performance in

numeracy in Moro Local Government Area of Kwara State. There was no significant main effect of school type on pupils' academic performance in numeracy ($F_{(1; 64)} = .651$; $P > 0.05$). The hypothesis is therefore not rejected in the light of the result since the significant value (.423) is greater than 0.05. This implies that school type had no significant effect on pupils' academic performance in numeracy.

Hypothesis Four: There is no significant interaction effect of treatment and gender on pupils' numeracy academic performance in Moro Local Government Area of Kwara State.
Table 1 also revealed the interaction effect of treatment and gender on pupils' numeracy academic performance in Moro Local Government Area of Kwara State. There was no significant interaction effect of treatment and gender on pupils' numeracy ($F_{(1; 64)} = .245$; $P > 0.05$). The hypothesis is therefore not rejected in the light of the result since the significant value (.622) is greater than 0.05. This implies that the interaction of treatment and gender had no significant effect on pupils' numeracy academic performance.

Hypothesis Five: There is no significant interaction effect of treatment and school type on pupils' numeracy academic performance in Moro Local Government Area of Kwara State.
Table 1 also revealed the interaction effect of treatment and school type on pupils' numeracy academic performance in Moro Local Government Area of Kwara State. There was no significant interaction effect of treatment and school type on pupils' numeracy academic performance in Moro Local Government Area of Kwara State ($F_{(1; 64)} = .856$; $P > 0.05$). The hypothesis is therefore not rejected in the light of the result since the significant value (.358) is greater than 0.05. This implies that the interaction of treatment and school type had no significant effect on pupils' numeracy academic performance in Moro Local Government Area of Kwara State.

Hypothesis Six: There is no significant interaction effect of gender and school type on pupils' numeracy academic performance in Moro Local Government Area of Kwara State.
Table 1 also revealed the interaction effect of gender and school type on pupils' numeracy academic performance in Moro Local Government Area of Kwara State. There was no significant interaction effect of gender and school type on pupils' numeracy academic performance in Moro Local Government Area of Kwara State ($F_{(1; 64)} = 1.225$; $P > 0.05$). The hypothesis is therefore not rejected in the light of the result since the significant value (.273) is greater than 0.05. This implies that the interaction of gender and school type had no significant effect on pupils' numeracy academic performance.

Hypothesis Seven: There is no significant interaction effect of treatment, gender and school type on pupils' numeracy academic performance in Moro Local Government Area of Kwara State.
Table 1 also revealed the interaction effect of treatment, gender and school type on pupils' numeracy academic performance in Moro Local Government Area of Kwara State. There was no significant interaction effect of treatment, gender and school type on pupils' numeracy academic performance in Moro Local Government Area of Kwara State ($F_{(1; 64)} = .796$; $P > 0.05$). The hypothesis is therefore not rejected in the light of the result since the significant value (.375) is greater than 0.05. This implies that the interaction of treatment, gender and school-type had no significant effect on pupils' numeracy academic performance.

Discussion of Findings

A finding of this study revealed that there was significant main effect of treatment on the academic performance of primary school pupils in numeracy in Moro Local Government Area of Kwara State. This might be as a result of pupils' exposure to the concrete objects in the location of the study. This is in line with the finding of Nneka, (2019) who revealed that concrete-representational-abstract strategy had significant effect on the mean achievement scores of pupils with dyscalculia in numeracy. It is show that concrete-representational-abstract are effective for teaching numeracy in Moro Local Government Area of Kwara State. This finding negates that of Bangis and Gaylo (2019) who revealed that treatment before Grade six, learners were taught using concrete representational abstract approach and their academic performance was low. However, after they were taught using concrete-representational-abstract approach, they reached fairly satisfactory level.

Another finding further revealed that there was no significant main effect of gender on pupils' academic performance in numeracy in Moro Local Government Area of Kwara State. This finding corroborates the finding of Peteros, Gamboa, Etcuban, Dinauanao, Sitoy, & Arcadio (2020) which revealed that pupils had a moderate level of self-concept towards learning Mathematics. No gender difference was found on the self-concept of the respondents. This finding negate the result of Maliki, Ngban, and Ibu (2017) who revealed that the male pupils had the highest performance in numeracy in Junior Secondary School examinations in Bayelsa, Nigeria.

In another finding, the result also revealed that there was no significant main effect of school-type on pupils' academic performance in numeracy in Moro Local Government Area of Kwara State. The result is the same as Salman (2021) who found that there was no significant effect of school-type on academic performance of primary school pupils. The result differs from that of Mijinyawa, Yeldu, Umar & Hussaini (2017) who found that there was significant difference between public and private secondary school students' performance in all the three science subjects studied. Private schools students performed significantly better than their public school students' counterparts.

Furthermore, the finding revealed that there was no significant interaction effects of treatments and gender on pupils' numeracy academic performance in Moro Local Government Area of Kwara State. The result is not the same as the result of Nneka**,** (2019) who revealed that there was significant main effect of treatments on the mean achievement scores of pupils with dyscalculia in numeracy and there was significant influence of gender on the numeracy achievement scores of pupils with dyscalculia. The result is in line with that of Abdulkareem (2021) who found that there was no significant effect of treatment and gender on pupils' academic performance.

Another null hypothesis revealed that there was no significant interaction effect of treatment and school-type on pupils' numeracy academic performance in Moro Local Government Area of Kwara State. The result negates the finding of Igbinedion & Epumepu (2011), who both revealed that there was significant difference in the academic performance in business studies between the public and private schools from 2008 to 2011. The percentage performance trend of public schools was higher than those of the private schools among both males and females. The finding is line with the finding of Oni (2020) which revealed that there was no significant effects of treatments and school-type on reading comprehension.

In another finding, there was no significant interaction effects of gender and school-type on pupils' numeracy academic performance in Moro Local Government Area of Kwara State. This finding corroborates that of Obafemi (2017) who found that gender and school-

type did not have significant effect on pupils' academic performance in social studies. The finding negates that of Aunio, Mononen, Ragpot, & Törmänen (2016) the result revealed that there were statistically significant differences in early numeracy skills between the children when they started first grade. The differences were related to the home language of the first graders in the English medium schools, as well as the type of school (public vs. private).

There was no significant interaction effect of treatment, gender and school-type on pupils' numeracy academic performance in Moro Local Government Area of Kwara State. The finding corroborates that of Saadu, Obafemi & Yusuf (2020) who found no significant effect of gender and school type. The finding negates the finding of Mburu (2013) who found that the type of school attended affected students' academic performance as majority of the girls who qualified to join tertiary institution were from single-sex schools.

Conclusion

Conclusion was drawn based on the findings of the study. It was concluded that concrete- representational-abstract was effective for teaching numeracy in Moro Local Government Area of Kwara State. This implies that these strategy should be adopted for teaching Numeracy to improve academic performance at the primary school level.

Recommendations

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

1. Since concrete-representational-abstract strategy was effective for teaching numeracy, primary school teachers and administrators in both public and private schools should adopt utilization of concrete-representational-abstract due to its effectiveness.
2. The teachers should enhance their professional development or skills through such as seminars, workshop, conferences, technological training on utilization of concrete –representational-abstract strategy as well as newly discovered teaching methods/strategies.
3. The teachers should make sure that there will be no gender discriminations in schools in order to motivate all pupils during teaching and learning process.
4. The school authorities should provide age appropriate learning environment to enhance appropriate teaching strategy for numeracy.
5. The Government should provide adequate fund and equipment/materials to public and private schools so as to encourage utilization of concrete-representational- abstract strategy to improve teaching and learning process.
6. Parent-Teacher Associations, Non-Governmental Organizations and Volunteers should provide self-directed and corrected concrete material or objects to the schools and school administrators in order to encourage teachers or childhood educators to utilize them accordingly.
7. Policy makers and curriculum planners should budget enough fund to the education sector for teachers motivation.

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TEST ANXIETY, AGE AND GENDER AS PREDICTOR OF SCIENCE UNDERGRADUATE STUDENTS' ATTITUDE TOWARDS EXAMINATION MALPRACTICE IN OBAFEMI AWOLOWO UNIVERSITY, ILE-IFE, NIGERIA

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Abstract
The study assessed test anxiety, age and gender as a predictor of science undergraduate students' attitude towards examination malpractice in Obafemi Awolowo University, Ile-Ife, Nigeria. These were with a view to providing information on how test anxiety, age and gender could predict science undergraduate students' attitude towards examination malpractice. The study adopted descriptive survey research design. The population of the study consisted of all undergraduate science students of Obafemi Awolowo University Ile-Ife. The sample consisted of 200 science students who were selected randomly from two faculties in the school using simple random sampling technique. From the selected faculties, four science departments were selected, which include; Science and Technology Education, Botany, Zoology and Microbiology using simple random sampling technique. The research instruments used for data collection were Students' Attitude Questionnaire towards Examination Malpractice (SAQEM) and Test Anxiety Inventory (TAI). Data collected were analyzed using Pearson product moment correlation and linear regression analysis techniques. The results showed significant relationship between science students' test anxiety and their attitudes towards examination malpractice ($r = 0.677$, $p < 0.05$). The results further showed that there was no significant relationship between science undergraduates' age and their attitude towards examination malpractice, ($F = 0.655$, $p > 0.05$). Finally, the results revealed no significant relationship between science undergraduate students gender and their attitude towards examination malpractice, ($F = 0.731$, $p > 0.05$). The study concluded that test anxiety is a significant factor which predicts science undergraduate students' attitude towards examination malpractice while age and gender are not significant factors in predicting science undergraduate students' attitude towards examination malpractice.

Keywords: Test Anxiety, Age, Gender, Examination Malpractice

Introduction

One of the objectives of education in Nigeria is to prepare youth to become self-dependent in order to meet the nation's manpower requirements. Schools need to conduct examinations purposely to assess the cognitive ability of the students. It follows then that examination is paramount in the placement of students. Examination malpractice can be

defined as a deliberate act of wrong doing, contrary to official rules, and is designed to place a candidate at an unfair advantage or disadvantage; it is a careless, illegal or unacceptable behaviour by a candidate in a formal test of his knowledge or ability in a particular subject (Philemon, 2007). It could also be said to be an act of omission or commission which compromises the validity and integrity of any examination (Okwu, 2006). Examination malpractice is counter-practice that is against ethics of examination, it is an act of disrespect to all rules and regulations guiding the good conduct of any examination or any evaluation process.

Examinations could be oral, written or both. However, examination malpractice is any wrongdoing before, during or after any examination. The Examination Malpractice Act (1999) describe Examination Malpractice as any of omission or commission by a person who in anticipation before, during and after any examination fraudulently secures any unfair advantage to himself or any other person in such a manner that contradict the rules and regulation to the extent of undermining the validity, authenticity of the examination and ultimately the integrity of the certificate issued. Alutu and Aluede (2006) defined examination malpractices as an illegal or unethical behaviour by somebody in the process of testing an examinee's ability or knowledge by means of question. Badejo and Gandonu (2012) explained the concept as a counter-practice that is against the ethics of examination, it is an act of disrespect to all rules and regulations guiding the good conduct of any examination or evaluation process. Oluyeba and Daramola (2008) remarked that examination malpractice include bringing of foreign materials into the examination hall; colliding with supervisors to cheat; receiving help from other candidates; impersonation; insult or assault on examination officials; electronically assisted malpractices; mass cheating; and changing of scores by examiners for candidates.

Gender, according to Okeke (2009) is the social and cultural-constructed characteristic and roles which are ascribed to male and female in any society. Different views exist as to which gender involves most in examination malpractices. Oniyamaand Oniyama, (2005) argued that more males engage in examination malpractices than the female while Bosah (2007) believed that there is more female involvement in examination malpractice than male. Although the result of the study by Khan and Khan (2011) indicated no significant difference in the proportion of the sexes involved in examination malpractices, but growing up as a male or female child may likely have influence on personality.

The student who is masculine tends to be aggressive, analytical, assertive, athletic, competitive, decisive, dominant, independent, individualistic, self-reliant, and willing to take risk while a student who is feminine tends to be affectionate, cheerful, loyal, sensitive, shy, self-spoken, sympathetic, tender understanding, warm and yielding. Therefore, it is obvious that a masculine student may likely be involved in examination malpractices than his feminine counterpart, going by the above traits. However, the study of Omonijo (2011) disagrees with this likelihood. The study shows that female students are afraid of being caught for violating the law and being penalized. However, in the contrary, Rotimi and Omonijo (2014) discovered that female students are more involved in examination malpractice than their male counterparts. In another research, Khan and Khan (2011) reported that there is no significant relationship between gender and involvement of students in examination malpractices. They found that both male and female students involve in examination malpractices on almost equal bases. Females have not evolved like males, due to the inactive nature of their lives.

However, one could also reason that somebody who is competitive, forceful and

willing to take risk may want to do everything possible, cheating inclusive in order to pass an examination. Therefore, it has been contended that gender factor is of paramount important to cognitive, affective and behavioural actions of individuals. In line with this, Duffy, Warren and Walsh (2001) submitted that there are biological based differences in brain component, which account for men's higher spatial, numerical and independent cognitive styles. In other words, what this means is that men and women behave differently because of variation in their psychological constitution along gender lines without much consideration to environmental influence.

The absence of significance difference between the anxiety levels of males and female most especially prior to examination could be attributed to many factors. Both students must have familiarized themselves with the academic environment and the females, thinking that they can always find themselves through by any means, write on parts of their body with the aim of engaging in examination malpractice. Boys have been found to partake in examination malpractice especially when they have fear of failing in difficult subjects. Based on this finding, sex as a variable will receive serious attention as predictor of examination malpractices.

Age, in education, is a level of development equivalent to that of an average person of a particular age. As already noted, the variable of age in combination with biological, cognitive, affective and psychological dimensions upon students' examination malpractice seems to be one of the main factors determining students' participation in examination malpractice. Amamize (2003) observed that maturation of the learner and exposure to different situations is a determining factor whether the student will involve himself or herself in examination malpractice. However, it still remains open to question whether a particular age group is more prone to examination malpractice. In some respect, all age group engage in examination malpractice and this is where the research will focus attention. Akanbi (2007) identified Learner's chronological age as a cognitive factor that affect candidates' performance in public examinations. According to Akanbi, (2007) the age at which children enroll for schooling may affect their cognitive capability and ability to gain maximally from academic endeavour. In addition, age may count against students to misbehave in schools. Students that are too young may not be able to cope academically, socially, psychologically and morally. Such students may resort to examination malpractice and other acts of indiscipline like cultism, stealing, rape, disobedience to school authority, absence from classroom and destruction of school property. Olowoniirejuaro and Akande (2005) asserted that age counts in involvement of students in examination malpractices. They observed that parents used lighter discipline and were relaxed with second and later children. They also noted that the last born in the family are over-pampered and assigned to fewer responsibilities than the elderly ones. As a result, there is possibility of students that lack discipline to be involved in examination malpractices. In contrary to the assertion, Dada (2014) discovered no significant relationship between age of students and their involvement in examination malpractice.

Zeidner (2007) viewed test anxiety as a combination of perceived physiological over arousal (i.e. being excited because one feels a question is cheap), feelings of worry and dread, self-depreciating thoughts and tension that occur during test situations. It is a physiological condition in which students experience fear and tension before and/or during examinations. Salend (2012) added that test anxiety can drastically hinder an individual's ability to perform well in school as well as negatively affect achievement in examinations. Cassady (2010) asserted that between 25-40 per cent of students' experience test anxiety.

According to him, anxiousness is evoked when a student believes that the evaluative situation (i.e. an examination) exceeds his or her intellectual capabilities. He maintains that test anxiety manifest in wet hands, delay in approaching questions and feelings of nervousness during examinations. Saland (2012) reported that test anxiety is caused by ineffective teaching, pressure from peers, family and teachers, poor prior testing performance and poor study habits. While Donna (2011) opined that test anxiety can Studies on the causes of examination malpractice reveals that low morality, poor school facilities and desire to succeed at all cost by the students are the common reasons why students engage in examination malpractice

Test anxiety is another major factor that leads students to engage in examination malpractices. Olusade (2003) defined anxiety as the chronic fear that occurs when a threatened event is in the offing but is unpredictable. In a similar way, May (1977) as cited in Ibrahim (2005), viewed anxiety as a maladjustment behaviour. Test anxiety therefore is the fear a student exhibits before, during or after writing a test. According to Ibrahim (2004), several factors account for test anxiety among students leading some of them into examination malpractices. Some studies have equally examined the contribution of feedback from continuous assessment to performance of students in examinations. Onuka (2009) sees feedback as the application of evaluation results for correcting anomalies in students "performance. His study found that the feedback resulting from school based assessment assisted students to discover their areas of strength and weaknesses, which they strive to strengthen or ameliorate. Osoba and Bakare (2008) equally describes test anxiety of students with prompt feedback and those with delayed feedback. According to them, students with delayed feedback were more text anxious than those with prompt feedback. They identified feedback and test anxiety as factors that could affect academic performance and suggested prompt feedback to students on their performance in both internal and external examinations. Considering the problem of examination malpractices, the rate at which students faint or fall sick during examination, and many other anxieties related problems in schools, it becomes necessary to find out the age and gender of the students and look at their anxiety levels.

Statement of the Problem

According to Oredein (2008), the variables of test anxiety, age and gender of students largely influence their behaviour especially during examinations. Some scholars have argued that these variables correlate to certain degree and cannot be separated from examination malpractices. Some researchers reported that, age of the learner determine the variation in the speed at which he learns and at the rate at which he engages in examination malpractices. Others have attached gender of the learner as factor for examination malpractices. For instance, in tracing the mode of examination malpractice between the sexes, Oredein (2008) argued empirically that girls find it easy to inscribe information on any part of their body like thighs, baby pampers, purses and palms than their male counterpart. Apart from this, other scholars have identified test anxiety as the main cause of examination malpractices. The scourge is common to both internal, external and entrance examinations to tertiary institutions. As much as researches are being conducted on examination malpractice, there is scanty information on how age, gender and test anxiety predicts examination malpractices among undergraduate science students in Obafemi Awolowo University, Ile-Ife.

Purpose of the Study

This study aims at investigating test anxiety, age and gender of science undergraduate students' attitude towards examination malpractice in Obafemi Awolowo University, Ile- Ife, Nigeria. The specific objectives of the study are to:

i. determine the relationship between science students' test anxiety and their attitude towards examination malpractice in Obafemi Awolowo University, Ile-Ife;
ii. assess the relationship between science undergraduate students' age and their attitude towards examination malpractice in Obafemi Awolowo University, Ile-Ife; and
iii. examine the relationship between science undergraduate students' gender and their attitude towards examination malpractice in Obafemi Awolowo University, Ile-Ife.

Hypotheses

The following null hypotheses were generated to guide the study:

H_o1: There is no significant relationship between science students' test anxiety and their attitude towards examination malpractice.

H_o2: There is no significant relationship between science undergraduate students' age and their attitude towards examination malpractice.

H_o3: There is no significant relationship between science undergraduate students' gender and their attitude towards examination malpractice.

Methodology

The study employed the descriptive survey research design. Nworgu (2002) explained that studies that aims at collecting data, describing it in a systematic way, the characteristics, features or facts about a given population is a descriptive survey research. The population of the study consisted of all the undergraduate science students in Obafemi Awolowo University Ile-Ife, Nigeria. The sample consisted of 200 science students who were selected randomly from two faculties using simple random sampling technique. From the selected faculties, four science departments were selected, which include; Science and Technology Education, Botany, Zoology and Microbiology using simple random sampling technique. From each of the selected department, fifty students were selected using simple random sampling technique. The instruments used for data collection are Students' Attitude Questionnaire towards Examination Malpractice (SAQEM) and Test Anxiety Inventory (TAI). The SAQEM comprised two sections. Section A sought for demographic characteristics of the respondents such as; sex, and gender. While, section B contain items on students' attitude toward examination malpractices patterned after 4-point Likert Scale from which subjects were required to indicate their level of agreement with responses ranging from Strongly Agree (SA)to Strongly Disagree (SD).The Test Anxiety Inventory (TAI) measures anxiety proneness to test and evaluative situations. The inventory consists of 20 items that assesses students test anxiety. Responses to the items vary from "almost never" to "almost always" with a minimum score of 20 and maximum of 80.After drafting the instruments, the instruments were given to evaluators and educational psychologists for their comments and corrections on both content and face validity. Their inputs and contributions, helped in modifying and improving the structure of the sentence and this were used to prepare the final drafts for the study. Pilot test was carried out on some selected undergraduate science students outside the scope of the study. The results of the pilot test

were subjected to Pearson Product Moment Correlation which yielded reliability coefficient (r) of 0.78and 0.76 respectively, which were considered high enough for the study. Data collected were analysed using linear regression and Pearson Product Moment Correlation analysis techniques.

Results

Testing of Hypotheses

Hypothesis One: There is no significant relationship between science students' test anxiety and their attitudes towards examination malpractice.

In order to test this hypothesis, data collected on science students' test anxiety and their attitudes towards examination malpractices were subjected to Pearson moment product correlation and the results are presented in Table 1.

Table 1: Pearson Product Moment Correlation of the Relationship Between Science

Variables	N	Mean	S.D	df	r	Sig.(2-tailed)
Test Anxiety	200	24.76	5.85	198	0.677	.000
Attitude to Exams Malpractice	200	34.55	5.84			

(r = 0.677, p < 0.05)

Results in Table 1 showed that there is significant relationship between science students' test anxiety and their attitudes towards examination malpractice (r = 0.677, p < 0.05). Thus, the null hypothesis that states that there is no significant relationship between science students' test anxiety and their attitudes towards examination malpractice is hereby rejected.

Hypothesis Two: There is no significant relationship between science undergraduate students' age and their attitude towards examination malpractice.

In order to test this hypothesis, data collected on science undergraduates' age and their attitude towards examination malpractice were subjected to linear regression analysis and the results are presented in Table 2.

Table 2: **Regression Analysis of the Relationship between Science Undergraduate Students' Age and their Attitude towards Examination Malpractice.**

Model	Sum of Squares	df	Mean Square	F	Sig.
Regression	22.397	1	22.397	0.655	.419
Residual	6773.103	198	34.208		
Total	6795.500	199			

(F = 0.655, p > 0.05)

Results in Table 2 showed that there is no significant relationship between science undergraduates students' age and their attitude towards examination malpractice(F = 0.655, p > 0.05). Therefore, the null hypothesis that states that there is no significant relationship between science undergraduate students' age and their attitude towards examination malpractice is hereby not rejected. The R Square value of 0.057[a] indicated a low degree of correlation between science undergraduates' age and their attitude towards examination malpractice in the study area. Also, the R Square value of 0.003 accounted for a low

variation of 0.3% in science undergraduate students age and their attitude towards examination malpractice.

Hypothesis Three: There is no significant relationship between science undergraduate students' gender and their attitude towards examination malpractice.

In order to test this hypothesis, data collected on science undergraduate students' gender and their attitude towards examination malpractice were subjected to linear regression analysis and the results are presented in Table 2

Table 3: **Regression Analysis of the Relationship Between Science Undergraduate Students' Gender and their Attitude towards Examination Malpractice.**

Model	Sum of Squares	df	Mean Square	F	Sig.
Regression	25.012	1	25.012	0.731	.393
Residual	6770.488	198	34.194		
Total	6795.500	199			

R = 0.061a, R Square = 0.004, Adjusted R Square = -0.001

(F = 0.731, p > 0.05)

Results in Table 3 showed that there is no significant relationship between science undergraduate students' gender and their attitude towards examination malpractice (F = 0.731, p > 0.05). Hence, the null hypothesis that states that there is no significant relationship between science undergraduate students' gender and their attitude towards examination malpractice is hereby not rejected. The R Square value of 0.061[a] indicated a low degree of correlation between science undergraduate students gender and their attitude towards examination malpractice in the study area. Also, the R Square value of 0.004 accounted for a low variation of 0.4% in science undergraduate students' gender and their attitude towards examination malpractice.

Discussion of Findings

The findings of the study revealed significant relationship between students' test anxiety and their attitudes towards examination malpractice. The finding did not corroborate Inongha (2019) that test anxiety has no significant relationship with students' attitudes towards examination malpractice. The result supported the findings of Farooqi, Ghani & Spielberger (2012) that there is significant relationship between test anxiety and students' attitude towards examination malpractice.

The result obtained in the study further revealed no significant relationship between science undergraduate students' age and their attitude towards examination malpractice in Obafemi Awolowo University, Ile-Ife, Nigeria. The finding contradicts with the findings of Olowoniirejuaro and Akande (2005) as they asserted that age counts in involvement of students in examination malpractices. They also noted that the last born in the family are over-pampered and assigned to fewer responsibilities than the elderly ones. The finding corroborated Dada (2014) that there is no significant relationship between age of students and their involvement in examination malpractice. The finding is also in agreement with Khan and Khan (2011) when they found no relationship between students' age and their

involvement in examination malpractice.

Finally, the study revealed no significant relationship between science undergraduate students' gender and their attitude towards examination malpractice. The finding was not in line with the finding of Leming (2010) that found that more female engaged in examination malpractice than males. The result also supported Khan and Khan (2011) that there was no significant relationship between gender and students' examination malpractice. The finding is in contrary with Omonijo & Nnedum (2012) that male students involved more in examination malpractices than their female counterparts.

Conclusion

This study has important contributions and high implication for the educational practices in Nigeria tertiary institutions. Based on the analysis of data and the interpretation of the results of the study, it can be concluded that when considering examination malpractice, factor such as age and gender had no significant relationship with examination malpractice while test anxiety contributes significantly to students' involvement in examination malpractice in the university.

Recommendations

Based on the findings of the study, the following recommendations are made:

1. Counseling services should be given to students at all times to keep the innocent ones far from the menace and discourage those involve in examination malpractice from future engagement.
2. Reorientation programmes and proactive counselling should be organized for students who show tendency to engage in examination malpractice.
3. Measures of students' test anxiety and attitude towards examination malpractice could be used to identify students who are likely to engage examination malpractice.
4. Government should provide books, laptops and other educational facilities for schools to enable all students have access to academic facilities. This will bridge the gaps between the rich and the poor students.
5. Government should de-emphasize the certificate oriented policy and encourage excellence through hard work.

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EFFECTS OF SMALL GROUP DISCUSSION METHOD ON PUPILS' ACADEMIC PERFORMANCE IN NUMERACY IN BARUTEN LOCAL GOVERNMENT AREA OF KWARA STATE, NIGERIA.

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Abstract
The study examined effects of small group discussion method on pupils' academic performance in numeracy in Baruten local government area of Kwara State, Nigeria. The study adopted pretest-posttest Quasi-experimental research design. The population for the study consisted of all pupils in Baruten Local Government of Kwara State. A stratified random sampling technique was used to select four schools, two public and two privates. The Numeracy Performance Test (NPT) was used to obtain pretest and posttest scores. The instrument was validated by the Numeracy teachers of the selected schools. Items therein were established using the test-retest method within two weeks. Therefore, the Pearson Product Moment Correlation (PPMC) was used to establish the reliability coefficient of the instruments at 0.82. Data collected were analysed using Analysis of Covariance (ANCOVA). All the hypotheses were tested at a 0.05 level of significance. It was found that, there was a significant main effect of small-group discussion on pupils' academic performance in Numeracy in Baruten local government area of Kwara state ($F_{(1; 99)} = 5.746$, $P < 0.05$),there was no significant main effect of gender on pupils' academic performance in Numeracy in Baruten local government area of Kwara state ($F_{(1; 99)} = 3.782$, $P < 0.05$), there was no significant main effect of school type on pupils' academic performance in Numeracy in Baruten local government area of Kwara state ($F_{(1; 99)} = .491$, $P < 0.05$), It was concluded that small group discussion could help primary school pupils learn better, especially in the numeracy. Also, it was recommended among other that, teachers should be trained on how to use small group discussion in teaching and learning of all subjects especially numeracy.

Key Words: Academic performance, Numeracy, small group discussion, gender and pupil

Introduction

Academic outcomes are participant test scores at the end of a given program. It is also an evaluation of students through a comprehensive, systematic, cumulative, diagnostic, formative and summative evaluation of what they have learned in a variety of areas, including numeracy (Ebenuwa, 2010). Numeracy is one of the subjects that is taken very seriously within the school system, regardless of the country or level of education. It has been described as a model of thinking which encourages learners to observe, reflect and reason logically about a problem and in communicating ideas, making it the central intellectual discipline and a vital tool in science Olunloye, (2010). In terms of curriculum relevance, numeracy is compulsory at the primary schools' level and a prerequisite for moving from the junior to the senior secondary school; just as at the tertiary level of education, a sound background in numeracy or mathematics is a necessary condition for the study of all science, technology and social science-based courses, as required by the Joint

Admission and Matriculation Board (Uwadiae, 2010)

Despite the recognition accorded to mathematics due to its relevance, Uwadiae, (2010) reported that less than 42% of registered candidate in SSCE obtain credit pass in mathematics. WAEC (2017) also reported that 2017 result of mathematics is better than 2016. According to Olunloye (2010), this ugly trend of high failure rate in mathematics is a national disaster. Therefore, feasible ways of improving the performance of pupils in numeracy according to Ajiboye and Ajitoni (2008) is to allow pupils learn best by being interested and actively involved in their work, seeing themselves, doing themselves, puzzling themselves, confirming their own suppositions, experimenting themselves, and making decisions themselves on the strong-point of ground which they have gathered themselves. The pupils should always make mistakes and rectify with the new knowledge and grounds that have uncovered, This methodological concept should be participatory via interaction, unity, and action-oriented communication is small group discussion because it is allowed pupils to interact through sharing of opinions to solve the target problem

The small group discussion method is also approach that gives room for pupils' active involvement in teaching and learning activities. In a discussion, all of the pupils as the participants will have the same chance and opportunity to communicate in the sense of mutual communication. Putri, Suparman, Suka (2014) said that group discussion is more effective if the group consisted of 3-4 pupils; it enables the pupils to give their opinions or ideas to other pupils easily. A small group is a small member of human, working together through interaction whose interdependent relationship allows is to achieve a mutual goal. It means small group used to combine several people to achieve their goals together. Small group discussion or working in small groups has been shown to improve pupils understanding, retention of material, and problem-solving abilities (Kenz & Greg, 2000)

Group discussions are at the centre of medical education as students learn more efficiently by small group discussions. Small group discussion (SGD) session as an instructional method is included in the curriculum of University Sains Malaysia-Karnataka Lingayat Education Society (USM-KLE) International medical program. The study was conducted for first year undergraduate medical students of USM-KLE International medical program. The responses were obtained on a Likert scale to indicate their degree of agreement with the statements in the questionnaire. In order to overcome the limitations of only lectures in a basic science subject, inclusion of an active teaching-learning small group session facilitated students in better understanding of the subject, ability to apply biochemical principles to clinical cases and development of communication skills (Chetana, 2014)

One maybe aware that educational institutions follow different teaching methodologies to integrate knowledge. One of those are many small group teaching methodologies which are student-centered. Fishbowl group dynamics is one such technique where both communication skills and observational abilities can be developed in the students. A Cross-Sectional study was conducted on a group of 55 second-year medical students using fishbowl group method. It was found that, the score for MCQ test in traditional teaching was 8.724 ± 3.614 and that in the fishbowl was 10.769 ± 2.875, which was found to be statistically significant with a p-value of 0.025 ($p<0.05$). Feedback questionnaire for fishbowl also showed it to be a preferred method of teaching overtraditional teaching (Naveena, & Anuradha, 2018)

Gender refers to the socially and culturally structured and constructed attitude and behavior designated to females and males in a particular society (Pereira, 2007). Dee (2005) asserts that gender interactions between teachers and learners have significant effects on students' achievements. However, studies of Holmlund and Sund (2005) and Tymms (2005) revealed that teachers' genders have no effect on students' achievements. Feldman (2010)

conducted a study in USA on the effect of gender differences on academic achievement in Early Childhood Kindergarten Class. This was attributed to the fact that there was an assumption that male children were more intelligent than the female students. The Feldman study established that children of both sexes start school with roughly similar potential to learn. Their scores on Intelligence Quotient tests were approximately equivalent when gender difference was controlled. The study however found out that girls ‟ advantage in reading became apparent by third grade and gender differences continued to increase through eighth grade. The study however established that the test scores of female students decrease over time when children move up the ladder in the education arena. Another variable of importance to the study is school type.

Okon and Archibong (2015) revealed that students in private secondary schools performed better in Social Studies than those in public schools. David and Beegle (2005) reported that students who attended public junior secondary schools have higher test scores in their result than those who attended private schools. Alimi, Ehinola and Alabi (2012) agreed that there is significant difference in facilities available in public and private schools. In spite of this, no significant difference in academic performance of students existed in the two types of secondary schools. Harry (2016) argued that private schools are not only better resourced but also have parents whose socio-economic status is higher and are more involved in their children's education. But it was agreed upon that public schools have more professionally qualified teachers than the private schools. Against this background, the researchers examined small group discussion method on pupils' academic performance in Numeracy in Baruten Local Government Area of Kwara State

Statement of the Problem

Numeracy is a subject that is developed across the primary three curriculum. It has to do with reason logically, problem-solving skills and having the confidence and competence to use numbers and measures in various settings.It is one of the major subjects offered at the primary school level. Poor performance in numeracy at this level of education might be as a result of inadequacies and inappropriate use of classroom practices by the teachers. Despite all the efforts by researchers, to improve the performance level of pupils in numeracy, the problem still persists. This hasbeen a source of focus to all stakeholders in education more especially that numeracy is a majorsubject in schools. Based on Pupils' performance in Numeracy in Kwara state common entrance for 2020/2021 academic session, it was evident that Pupils' performance in numeracy has been declining. Therefore, researcher carried out research on the effects of small group discussion strategy on pupils' academic performance in numeracy in Baruten local government area of Kwara State.

Purpose of the Study

The main purpose of this study is to examine the effects of small group discussion method on pupils' academic performance in Numeracy in Baruten Local Government Area of Kwara State. Specifically, the specific objectives are to;

1 examine effect of gender on pupils' academic performance in Numeracy in Baruten Local Government Area of Kwara State.
2 determine effect of school type on pupils' academic performance in Numeracy in Baruten Local Government Area of Kwara State.
3 investigate interaction effect of small group discussion and gender on pupils'

academic performance in Numeracy in Baruten Local Government Area of Kwara State.

Hypotheses

The following research hypotheses are formulated for the study and will be tested at 0.05 level of significance;

H_o1: There is no significant main effects of small-group discussion method on pupils' academic performance in Numeracy in Baruten local government area of Kwara State.

H_o2: There is no significant main effects of small group discussion method on gender on pupils' academic performance in Numeracy in Baruten Local Government Area of Kwara State.

H_o3: There is no significant main effect of school type on pupils' academic performance in Numeracy in Baruten Local Government Area of Kwara State.

Methodology

This study adopted pre-test/post-test Quasi-experimental research design. The population of study comprised all the public primary schools with a total of 15,150 and private primary schools with a total of 6,852 pupils. The sample sizes for this study were four primary three classes with the total number of two hundred and twenty-nine pupils. Simple random sampling technique was used to select one hundred and eight pupils. The Numeracy Performance Test (NPT) was used to obtain pre-test and post-test scores. The instrument was used as a pre-test before the small group discussion and as a post-test after the small group discussion. It was given to experimental and control groups based on some topics selected from the curriculum to which pupils were exposed. The instrument was validated by the Numeracy teachers of the selected schools. Items therein were established using the test-retest method within two weeks. Therefore, the Pearson Product Moment Correlation (PPMC) was used to establish the reliability coefficient of the instruments at .82. The small group discussion lasted for six weeks and was carried out by the researcher and the research assistants. The procedure adopted was to develop the pretest based on the topics chosen to the pupils before the small group discussion began. After this, those in the experimental group were taught the selected topics using small group discussion method, and the control group was prepared using a conventional method. After the teaching and learning exercises, the test was administered on the two groups again. The data collected were analysed using Analysis of Covariance (ANCOVA). All the hypotheses were tested at a 0.05 level of significance and results obtained.

Results

Test of Hypotheses

All the hypotheses were tested at a 0.05 level of significance using Analysis of Covariance (ANCOVA)

Hypothesis One: There is no significant main effect of small-group discussion on pupils' academic performance in Numeracy in Baruten local government area of Kwara state

Table 1: Summary of ANCOVA on Effect of Small-Group Discussion on Pupils' Academic Performance in Numeracy

Source	Type III Sum of Squares	df	Mean Square	F	Sig.
Corrected Model	1308.712a	8	163.589	1.800	.086
Intercept	41243.998	1	41243.998	453.715	.000
Pretest	69.783	1	69.783	.768	.383
Small Group	522.364	1	522.364	5.746	.018
Gender	343.792	1	343.792	3.782	.055
School type	44.640	1	44.640	.491	.485
Small Group * Gender	.385	1	.385	.004	.948
Small Group * School type	337.620	1	337.620	2.714	.057
Gender * School type	21.787	1	21.787	.240	.626
Small Group * Gender * School type	172.763	1	172.763	1.901	.171
Error	8999.390	99	90.903		
Total	672225.000	108			
Corrected Total	10308.102	107			

Table 1 shows the on the significant main effect of small-group discussion on pupils' academic performance in Numeracy in Baruten local government area of Kwara state. There was a significant main effect of small-group discussion on pupils' academic performance in Numeracy in Baruten local government area of Kwara state ($F_{(1; 99)} = 5.746$, $P < 0.05$). The hypothesis is therefore rejected in the light of the result since the significant value (.018) is less than 0.05. This implies that small group discussion method had significant effect on academic performance in Numeracy in Baruten local Government Area, Kwara State.

Table 2: Summary of Bonferroni's Post Hoc Pairwise Comparison of the Scores Within the Two Groups

Treatment	Mean Score	Experimental	Control Group
Small Group Discussion	80.509	*	
Conventional	75.898		*

Small group discussion method refers to experimental group, while, conventional methods known as control groups. Table 2 reveals the significant main effect exposed by Table1 due to the difference between small group discussion method and Conventional Group. This implies that those taught or exposed to small group discussion method performed significantly better than those taught with the Conventional method.

Hypothesis Two: There is no significant main effect of gender on pupils' academic performance in Numeracy in Baruten Local Government Area of Kwara State.

Table 1 shows the on the significant main effect of gender on pupils' academic performance in Numeracy in Baruten Local Government Area of Kwara State. There was no significant main effect of gender on pupils' academic performance in Numeracy in Baruten local government area of Kwara state ($F_{(1; 99)} = 3.782$, $P < 0.05$). The hypothesis is therefore not rejected in the light of the result since the significant value (.055) is greater than 0.05. This

implies that gender had no significant effect on academic performance in Numeracy in Baruten local Government Area, Kwara State.

Hypothesis Three: There is no significant main effect of school type on pupils' academic performance in Numeracy in Baruten Local Government Area of Kwara State.
Table 1 shows the on the significant main effect of school type on pupils' academic performance in Numeracy in Baruten Local Government Area of Kwara State. There was no significant main effect of school type on pupils' academic performance in Numeracy in Baruten local government area of Kwara state ($F_{(1; 99)} = .491$, $P < 0.05$). The hypothesis is therefore not rejected in the light of the result since the significant value (.485) is greater than 0.05. This implies that school type had no significant effect on academic performance in Numeracy in Baruten local Government Area, Kwara State.

Discussion of Findings

One of the results emanated from this study stated that, there was a significant main effect of small-group discussion on pupils' academic performance in Numeracy in Baruten local government area of Kwara state ($F_{(1; 99)} = 5.746$, $P < 0.05$). This was in agreement with the findings of *Chetana,* (2014) who conducted a study conducted for first year undergraduate medical students of USM-KLE International medical program. An anonymous questionnaire was given to the group to elicit their perceptions about small group discussion. It was gathered that small group session facilitated students in better understanding of the subject, ability to apply biochemical principles to clinical cases and development of communication skills. Naveena, and Anuradha, (2018) who conducted research on fishbowl group dynamics and a conventional lecture on the topic "MALARIA", and to assess the effectiveness of fishbowl group dynamics over conventional teaching methodology. A Cross-Sectional study was conducted on a group of 55 second-year medical students, divided into groups A and B. Group A with 29 students were taught by a traditional lecture and an MCQ test was conducted for 20 marks, and their opinions gathered. Group B with 26 students participated in fishbowl group dynamics, with an MCQ test, and feedback gathered. It was found that score for MCQ test in traditional teaching was 8.724 ± 3.614 and that in the fishbowl was 10.769 ± 2.875, which was found to be statistically significant with a p-value of 0.025 ($p<0.05$). Also, questionnaire for fishbowl also showed it to be a preferred method of teaching over traditional teaching. This implies that, small group discussion or working in small groups has been shown to improve pupils understanding, retention of material, and problem-solving abilities.

Another result from this study stated that, there was no significant main effect of gender on pupils' academic performance in Numeracy in Baruten local government area of Kwara state ($F_{(1; 99)} = 3.782$, $P < 0.05$). This against the submission of Dee (2005) who asserted that gender interactions between teachers and learners have significant effects on students' achievements. This finding was supported by Holmlund and Sund (2005) and Tymms (2005) who revealed that teachers' genders have no effect on students' achievements. Feldman (2010) conducted a study in USA on the effect of gender differences on academic achievement in Early Childhood Kindergarten Class. The study however found out among others that girl's advantage in reading became apparent by third grade and gender differences continued to increase through eighth grade. This implies that performance is not gender

sensitive it depends on the method used by the teacher during teaching and learning

Another result from this study stated that, there was no significant main effect of school type on pupils' academic performance in Numeracy in Baruten local government area of Kwara state ($F_{(1; 99)} = .491$, $P < 0.05$).The result was in tandem with the view of Alimi, Ehinola and Alabi (2012) who agreed that there is significant difference in facilities available in public and private schools. Despite this, no significant difference in academic performance of students existed in the two types of secondary schools. The finding was in contrary to the submission of Okon and Archibong (2015) revealed that students in private secondary schools performed better in Social Studies than those in public schools. Also, David and Beegle (2005) found that students who attended public junior secondary schools have higher test scores in their result than those who attended private schools.

Conclusion

Based on the above discussion, it can be clearly stated that small group discussion could help primary school pupils learn better, especially in the numeracy, than the conventional method of teaching and learning irrespective of their gender, school type, and background because it gives chances to interact and share their opinions with one another on a specific task.

Recommendations

The following recommendations were made:

1. Teachers should be encouraged to use small group discussion in teaching and learning of all subjects especially numeracy
2. Educational stakeholders such as the Federal and State ministries of education, proprietors, and the National Educational Research and Development Council (NERDC) should provide and mandate small group discussion in teaching and learning for all the primary school teachers
3. Pupils' academic performance should not be determined based on their gender and school type because the two factors have been discovered not to have hinder pupils' academic performance

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EFFECT OF THINKING MAPS ON PUPILS' ACADEMIC PERFORMANCE IN BASIC SCIENCE IN ILORIN SOUTH LOCAL GOVERNMENT, KWARA STATE

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Abstract
The low academic performance of pupils in basic Science, particularly in recent years, has not been encouraging. To improve the pupils' performance, this study investigated the effects of thinking maps on pupils' Basic Science academic performance in Ilorin south local government area, Kwara State. This study adopted the pretest-posttest quasi-experimental research design. Pupils' Basic Science Performance Test (PBSPT) was used to obtain pretest and posttest scores. The instrument was validated by the Basic Science teachers of the selected schools and some lecturers in the Early Childhood and Primary Education Department. Pearson Product Moment Correlation (PPMC) was used to establish the reliability coefficient of the instruments at .75. Data collected were analysed using Analysis of Covariance (ANCOVA). All the hypotheses were tested at a 0.05 level of significance. It was found, among others, that there was a significant effect of thinking Map on pupils' Basic science academic performance in Ilorin South Local Government Area Kwara State($F_{(1:58)} = 4.275$, $P < 0.05$). Also, the thinking map strategy pupils improved pupils academic performance, ideas, organisation and skills. Based on the findings, it was recommended that thinking map should be employed in teaching pupils in the classroom.

Keywords: Academic performance, Thinking map, Gender, School type

Introduction

Academic performance is the end product of education. It is the degree to which learners, teachers or institutions attained their educational targets. Performance in education is usually measured upon examinations. It is the parameter that is used to gauge pupils' academic performance. For teachers to establish the strength or otherwise of pupils' learning in connection to stated performance objectives, both formative and summative evaluation instruments like teacher-made tests are administered such that the outcome in terms of the scores or grades that a pupil received is to capture the competence or skill acquired on all subject especially Basic Science (Owede, 2016).

Science in its general view is the tool with which man learns about his environment, its resources, and problems and how to control and utilise them both productively and sustainably it cuts across the school curriculum, and it's needed in all branches of science, applied science and social sciences. Therefore, pupils must be well grounded in Basic Science from primary school level to successfully study single subjects at the secondary school level (Ibe, Abonyi, Achimugu, & Njoku, 2014).

Basic Science is the first form of science pupils encounter at secondary school level; hence, it is important to prepare pupils at the Basic School levels to study core science subjects at the Senior Secondary school level (Bukunola & Idowu, 2012). This implies that for a student to study single science subjects at the Senior Secondary school level successfully, such a student must be well grounded in Basic Science at the primary school level (Samuel, 2017).

The Basic Science curriculum emphasises the switch of teaching and learning paradigm from the behaviourism to constructivism to enhance conceptual learning in Science and to promote attitude of students towards learning Science, the curriculum demands teaching-learning strategies that place the teacher as a facilitator. Therefore, this situation calls for exploring other teaching methods found effective in other fields and countries. Opara (2017) proposed that teachers should use teaching strategies that are helpful in nature and which should involve learners' active participation and encourage skill acquisition. Such strategies could be one that will arouse the interest among pupils in the learning process.

There are other reasons which impacted negatively on science teaching. According to Ogunnika (2018), there is a high-rate failure in academic performance of pupils in basic Science which needs improvement. In addition to the poor state of education in the country part of these studies are: Ibe, Abonyi, Achimugu, and Njoku, (2014) who noted poor academic achievement in basic Science in the study carried out in close resemblance to the report made by Oyedeji (2010) where he lamented that Nigeria remains an undeveloped economy principally because of the unsatisfactory status of her science education especially in primary and junior secondary school. The problems were exacerbated when the education budget got tighter and budget cuts led to a shortage of facilities and equipment needed for science teaching. Furthermore, Ibe et al, (2014) submitted that a serious aberration on the quality of Science in Nigeria is due to the over-emphasis on mastery of subject content, theory and excessive examination consciousness against practical orientation toward science-based disciplines. This led to the failure of the science education program in developing countries and Nigeria in particular.

To improve academic performance of pupils in basic science, pupil-centred activity-based and minds-on approaches that cater for individual needs and differences, learning styles, interests and abilities should be adopted. One of those approaches that can be used to organise learning is a thinking Map, David Hyerle designed this for the Innovative Learning Group (Hyerle, 2004). Hyerle created these visual maps when he was teaching in an inner-city middle school in California in the 1980s, His frustration with helping pupils make connections to the content his teaching influenced him to rely on visual mapping strategies to process information. Hyerle (2011) describes Thinking Maps as a visual language, the concept of language is that once learned by a group of people, communication is enhanced, and the group begins to communicate within the same framework.

Thinking maps represent a mental map followed by it the learner during practicing education process and thinking as it sets a starting point and finishing with putting technique to develop learners learning and monitor performance, to identify strengths points to be strengthened and weaknesses to be improved to achieve the desired goals of the education process, as it provides organised knowledge which is working to find a relation and interdependence between them and the abstract concepts which are involved, and practicing different science processes among pupils (Busan, 2014).

Thinking map strategy is student-centred as described by Lea, Stephenson and Troy (2013), who pointed out that it allows learners to be active rather than passive listeners and emphasises deep learning and understanding, thinking map strategy is a Beneficial learning strategy to help students brainstorm any topic and think creatively. Generally, a thinking map provides and organises knowledge by means of hierarchies and categories. Along with this, those hierarchies and correlations in thinking maps spread meaningfully from a central image without a certain order (Budd, 2015).

Abdullah (2019) carried out a research on effect of thinking maps on the academic performance of pupils in basic Science for this study two research questions and three null hypotheses were formulated and the findings revealed that pupils in the treatment group performed significantly than those were taught using the conventional method. Bamikole (2019) conducted a study on the effects of thinking map strategy and gender on pupils academic performance in basic Science in rivers state three null hypotheses were formulated for the study and were tested was tested and the findings of the study revealed that thinking map strategy improved pupils academic performance in basic Science. Cooks and Sunseri (2014) investigated the effect of thinking maps on Basic Science, three hypotheses were formulated with three research questions they concluded that students' Basic science performance was improved especially in terms of ideas and organisation due to the use of thinking maps.

Okolo (2018) asserted that gender issues in Basic Science have a source of aversion and that Science related subjects has been male stereotyped since it was regarded as abstract and difficult subject as well as has attributes which boys were attracted to. Ani (2020) in the study conducted, observed that male students performed better than their female counterparts when taught Basic Science. Feldman, (2010) conducted a study in United States of America on the effect of gender differences on academic achievement in Early Childhood Kindergarten Class. This was attributed to the fact that there was an assumption that male children were more intelligent than female students. The Feldman study established that children of both sexes start school with roughly similar potential to learn. Their scores on tests were approximately equivalent when gender difference was controlled. However, it was that found that girls perform better than boys irrespective of the school type.

Newhouse and Beegle (2005) evaluated the effect of school type on the academic achievement of junior secondary school students (grades 7-9). The primary data source for the study was the three full rounds of the Indonesia Family Life Survey (IFLSI, IFLS2, and IFLS3). The result showed that students that attended public junior secondary schools, moderating for other characteristics, have higher test scores upon completion than those who attended private schools. Also, Bibbyand Peil (2013) stated that private primary school children do better than public school pupils. From the foregoing, it was evident that there was a controversy as to whether school-type have impact on academic performance of pupils across the ages. This was the motive behind given school type priory in this study to be able to establish whether or not academic performance could be determined by school -type.

Statement of the Problem

The low performance of pupils in Basic Science and Technology particularly in the recent years has not been encouraging, different scholars have noted poor academic performance in Basic Science. Researchers lamented that Nigeria remains an undeveloped economy principally because of the unsatisfactory status of her science education, especially in primary and junior secondary school and this poor performance of pupils has been partly attributed to lack of equipment, teaching styles, incompetent teachers, and poor usage of instructional material most importantly poor method/strategy used in teaching. This has shown that pupils are passive, not active in their learning process which leads to inability of the pupils to understand concepts involved in Science. Studies on different strategies have been conducted but attention has not been given to the examination of the effect of thinking map on the academic performance of pupils. Therefore, the study examined the effect of thinking map on pupil's academic performance in Basic Science in Ilorin South Local Government, Kwara State.

Purpose of the Study

The study examined the effect of thinking map on pupils' academic performance in Basic science in Ilorin South Local Government Area, kwara State. The specific objectives were to:

a. examine the main effect of thinking map on pupils' academic performance in Basic science in Ilorin South Local Government, Kwara State.
b. investigate the main effect of gender on pupils' academic performance in Basic science
c. determine the main effect of school type on pupils' academic performance in Basic science

Hypotheses

The following hypotheses are formulated to guide the study

$H_0$1: There is no significant main effect of thinking map on pupils' academic performance in Basic science in Ilorin South Local Government Area Kwara State

$H_0$2: There is no significant main effect of gender on pupils' academic performance in Basic science in Ilorin South Local Government Area Kwara State

$H_0$3: There is no significant main effect of school type on pupils' academic performance in Basic science in Ilorin South Local Government Area Kwara State.

Methodology

This study adopted the pretest-posttest control group quasi-experimental research design. A stratified random sampling technique selected four schools, two public school and two private school in Ilorin South Local Government. because of the school type. Pupils' Basic Science Performance Test (PBSPT) was used to obtain pretest and posttest scores and it was administered to experimental and control groups. The instrument was validated by the Basic Science teachers of the selected schools and some lecturers in the Early Childhood and Primary Education Department. Items therein were established using the test-retest method within two weeks. Therefore, the Pearson Product Moment Correlation (PPMC) was used to establish the reliability coefficient of the instruments at 0.75. Treatment lasted for six weeks and was carried out by the researcher and the research assistants. The procedure adopted was to develop the pretest based on the topics chosen to the pupils. After this, the experimental group were taught the selected topics using a thinking map, and the control group was prepared using a traditional method. After the teaching and learning exercises, the two groups administered the test again. Data collected were analysed using Analysis of Covariance (ANCOVA). All the hypotheses were tested at a 0.05 level of significance

Results

$H_0$1: There is no significant main effect of thinking map on pupils' academic performance in Basic science in Ilorin South Local Government Area Kwara State

Table 1: Summary of Analysis of Co-variance(ANCOVA) showing significant main effect of thinking map on pupils' Basic science academic performance

Source	Type III Sum of Square	df	Mean Square	F	Sig.
Corrected Model	1037.334[a]	8	129.667	1.186	.323
Intercept	23923.774	1	23923.774	218.877	.000
Pretest	39.180	1	39.180	.358	.552
Thinking_Map	467.314	1	467.314	4.275	.043
Gender	1.116	1	1.116	.010	.920
School type	.797	1	.797	.007	.932
Thinking Map * Gender	107.089	1	107.089	.980	.326
Thinking_Map * School type	65.552	1	65.552	.600	.442
Gender * School type	20.175	1	20.175	.185	.669
THinking_Map * Gender * School type	9.168	1	9.168	.084	773
Error	6339.532	58	109.302		
Total	425050.000	67			
Corrected Total	7376.866	66			

Table 1 shows the effect of thinking map on pupils' academic performance in Basic science in Ilorin South Local Government Area Kwara State. There was significant effect of thinking map on pupils' academic performance in Basic science in Ilorin South Local Government Area Kwara State($F_{(1;58)} = 4.275$, $P < 0.05$). The hypothesis is therefore rejected in the light of the result since the significant value (.043) is less than 0.05. This implies that thinking map had significant effect on pupils' academic performance in Basic science in Ilorin South Local Government Area Kwara State

Table 2: Summary of Bonferroni's Post Hoc pairwise Comparison of the scores within the two Groups

Treatment	Mean Square	Experimental	Control Group
Thinking Map	80.966	*	
Traditional Method	73.518		*

Table 2 reveals that the significant main effect exposed by table 2 is as a result of the significant difference among: Thinking maps strategy and Conventional Method. Thinking maps strategy refer to experimental group while conventional method known as control group. This implies that those taught by Thinking maps out-performed significantly than taught with those taught with traditional method.

$H_0$2: There is no significant main effect of gender on pupils' academic performance in Basic science in Ilorin South Local Government Area Kwara State

Table 1 shows the significant main effect of gender on pupils' academic performance in Basic science in Ilorin South Local Government Area Kwara State. There was no significant effect of gender on pupils' academic performance in Basic science in Ilorin South Local Government Area Kwara State. ($F_{(1;58)} = .010$, $P>0.05$). The hypothesis is therefore not rejected in the light of the result since the significant value (.920) is grater than 0.05. This

implies that gender had no significant effect on pupils' academic performance in Basic science in Ilorin South Local Government Area Kwara State

$H_0$3: There is no significant main effect of school on pupils' academic performance in Basic science in Ilorin South Local Government Area Kwara State

Table 1 shows the significant main effect of school type on pupils' academic performance in Basic science in Ilorin South Local Government Area Kwara State. There was no significant effect of school type on pupils' academic performance in Basic science in Ilorin South Local Government Area Kwara State. ($F_{(1; 58)} = .007$, P>0.05). The hypothesis is therefore not rejected in the light of the result since the significant value (.932) is grater than 0.05. This implies that school type had no significant effect on pupils' academic performance in Basic science in Ilorin South Local Government Area Kwara State

Discussion of Findings

One of the results originated from this study stated that, there was significant effect of thinking Map on pupils' academic performance in Basic science in Ilorin South Local Government Area Kwara State($F_{(1; 58)} = 4.275$, $P < 0.05$). This was in tandem with the findings of Abdullah (2019) who carried out research on the effect of thinking maps on academic performance of pupils in basic and the findings revealed that pupils at the treatment group performed significantly than those were taught using conventional method. Also, Bamikole (2019) conducted a study on effects of thinking map strategy and gender on pupils academic performance in basic Science in Rivers State. The findings of the study revealed that thinking map strategy improved pupils' academic performance in Basic Science. The result was also in agreement with Cooks and Sunseri (2014) who investigated the effect of thinking maps on Basic Science. It was found that students' Basic science performance was improved especially in terms of ideas and organisation due to the use of thinking maps. This implies that the teacher is the influential agent that inculcates knowledge to the learners with the right principles and practices which aid pupils' performance especially in Basic Science.

Another result emanated from the study revealed that there was no significant effect of gender on pupils' academic performance in Basic science in Ilorin South Local Government Area Kwara State. ($F_{(1;58)} = .010$, P>0.05). This was in contrary to the findings of Ani (2020) observed that male students performed better than their female counterparts when taught Basic Science. Also Feldman, (2010) conducted a study in United States of America on the effect of gender differences on academic achievement in Early Childhood Kindergarten Class. The findings of the study found that girls perform better than boys. This study's result established that the pupils' performance is not gender sensitive. This implies that, the academic performance of the pupils should not be judged based on gender by the strategy used by the teachers and extra effort made by the pupils like, listening attentively, independent reading, etc.

Also, result disclosed that there was no significant effect of school type on pupils' academic performance in Basic science in Ilorin South Local Government Area Kwara State. ($F_{(1; 58)} = .007$, P>0.05). The result of this study was different from the submission of

Newhouse and Beegle (2005) who evaluated the effect of school type on the academic achievement of junior secondary school students (grades 7-9). The result showed that students that attended public junior secondary schools, moderating for other characteristics, have higher test scores upon completion than those who attended private school. Also, Bibbyand Peil (2013) submitted that stated children who attended private primary schools do better than pupils in public schools. From the result of this study, it is established that the academic performance of the pupils especially should not be determined based on school type but by the strategy used by the teacher to drive home the subject-matter during teaching and learning.

Conclusion

Based on the findings of this study, it was concluded that pupils' academic performance in basic science was improved especially in terms of ideas, organisation, and skills due to the use of the thinking map strategy. Also, established that the pupils' academic performance should not be determined based on school type and gender but by the teacher's approach.

Recommendations

It was recommended that:

1. Teacher should be enlightened through organised seminars, workshops, and conferences on the effectiveness of thinking Map on academic performance of pupils in basic Science
2. Pupils' academic performance should not be determined based on their gender and school type because the two factors have been discovered not to be decisive factors that hinder pupil's academic performance
3. Curriculum developers in basic science like Federal and State Ministries of Education, school proprietors and NERDC should incorporate thinking Map into the curriculum as one of the innovative strategies that would be used to teach subjects in primary schools fundamental Science

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CLASSROOM ASSESSMENT: ASSESSMENT FOR LEARNING, ASSESSMENT OF LEARNING AND ASSESSMENT AS LEARNING

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Abstract
The paper discussed classroom assessment with focus on assessment for learning, assessment as learning and assessment of learning. In the educational system, assessment is the major technique for the determination of the learners' performance. For the objective in any learning to be achieve, assessment should be carried out. Therefore, identifying the purpose of any assessment is critical for it to be productive and efficient. Teachers use many different strategies and tools for classroom assessment, and they can adapt them to suit the purpose and the needs of individual students. Without using a variety of assessment tools and techniques, it will be very difficult for teachers or assessors to gather information about what those being assessed have learnt or able to do, and provide positive supportive feedback to students. The information from assessment are used to diagnose the individual needs of the students and also to improve instructional programmes thereby promoting national development. It was therefore suggested that the teachers should be trained on the art of identifying particular learning needs of the students, as well as providing immediate feeds back mechanism and direction to students; and also provide a range of alternative mechanism for assessing the same outcomes and approaches that are transparent so as to yield better interpretations.

Key words: Assessment, Learning, Classroom Assessment, Teacher

Introduction

The assessment of the performance of learners is an integral part of the educational system. This is because the assessment of students learning outcomes is germane to the realization of the objectives of education in any economy (Onuka & Akinyemi, 2012). In education, assessment is very important, as it serves as a medium for the provision of information about learning that can be used to: diagnose learners' strengths and needs, provide feedback on teaching and learning, provide a basis for instructional placement; inform and guide instruction; communicate learning expectations, motivate and focus learners' attention and effort, provision of practice applying knowledge and skills, provide a basis for learner's evaluation and gauge programmes effectiveness (MCTighe & Ferrara, cited in Onuka & Akinyemi, 2012).

The word assessment is from the Latin word *assidere* which means to sit beside (Stefanakis, 2002). Literally, assessment means sitting beside the learners. Assessment has been variously defined by scholars and authors. For example, Nitko and Broadfoot cited in Afemikhe (2014) defined assessment as the process of obtaining information for making decisions about students, curriculum, programmes and policy. The Assessment Reform Group (2002) saw assessment as the practice of collecting evidence of students' learning in terms of knowledge, skills, values and attitudes through observation of students' behaviour when carrying out task, test, examination and so on. This implies that it is only through

assessment that teachers can measure student's learning outcomes or achievements after being exposed to a series of instructions. Fenton (1996) stated that assessment involves the collection of relevant information that aids decision making. Thus, the essence of assessment is to collect or obtain information that will aid decision making about the students, curriculum, or policy.

The National Research Council (2001) opined that the purpose of educational assessment is to seek to determine how well students are learning and is an integrated part of the quest for improved education. It provides feedback to students, parents, educators, policy makers and the public about the effectiveness of educational services. Assessment is always a process of reasoning from evidence and is imprecise to some degree. Results from assessment are only what a person knows and can do. Hence there should be a more coherent and robust set of assessment practices. Thus, Afemikhe (2007) opined that assessment is a *sine quo non* for determining goal attainment through the use of feedback.

According to National Research Council (2001), every assessment carried out rely on three cardinal principles or pillars. These are:

i. A model of how students represent knowledge and develop competence in a content domain.
ii. Task or situations that allow one to observe student performance; and
iii. An interpretation method for drawing inferences from performance evidence.

Assessment in education implies the wide varieties of methods or tools that educators use to evaluate, measure, and document the academic readiness, learning progress, skill acquisition or educational need of students. Assessments are used to measure readiness for any programme, to identify weaknesses and strengths so as to provide specialized academic support, educational programme or social services. It is also used for the purpose of accountability, that is, to ensure that students are enrolled in effective schools, and also being taught by efficient teachers. Above all, important decisions taken about the student by the teachers, schools are based on the students' scores. (Glossing of Assessment Reform, 2015)

Pre-assessment is administered before students begin a lesson, unit, course or any academic programme. The essence is to establish a baseline with which educators measure learning progress over the duration of the course or programme or the instructional period. Second, it is to determine the general academic readiness for a course, programme, grade level or new academic programme that students may be transferring to. This type of assessment is also called diagnostic assessment.

Formative assessment is administered intermittently during a unit, course or academic program. The aim of formative assessment is to give teachers/educators in process feedback about what the students are learning or not learning so as to enable the teacher to modify, the instructional approaches, teaching materials and academic support. Formative assessment is usually not graded but forms part of the final score at the end of the program of instruction. It can take the form of quizzes, assignments, projects, questions and class discussions.

Summative assessment is used to evaluate learning at the end or completion of an instructional period, unit, course or school year. They are typically scored and graded tests, assignments or projects that are used to determine whether students have learned what they were expected to learn during the defined instructional period. Educators uses formative assessment outcome or result to modify or improve teaching techniques during an

instructional period while summative assessment are used to evaluate academic achievement at the conclusion of an instructional period. Black (1998) in trying to distinguish between formative and summative assessment opined that when the cook tastes the soup, that is formative assessment, when the customer tastes the soup, that is summative assessment.

According to Afemikhe (2014), the teaching process involves three interrelated activities: the pre teaching, core teaching itself and the after-teaching. In each of these activities, questions are asked. The first stage is related to the diagnostic assessment, the second is the formative assessment and the third is related to the summative assessment. The various varieties of methods available for use in the assessment of, for, and as learning depends on the purpose of the assessment.

Defining Classroom Assessment

Most assessment in the educational system takes place in classroom. Classroom assessment are also referred to as internal assessment. According to Vitello and Williamson (2017), an assessment is termed internal when at least one of the processes of setting, taking, marking and administration of the test are controlled by the students' learning institution. In classroom assessment, course work is usually the first assessment to be introduced, which was designed to facilitates the assessment of positive achievement (Tattersal, in Barrance, 2019). It is also to test skills which could be assessed with examinations (Elwood, 1999). Classroom assessment if properly carried out will engender learning benefits, by enhancing communication skills and encouraging students to take responsibility for their own learning (Bullock, Bishop, Martins, & Reid, 2002). Afemikhe (2014) contended that the function of the classroom includes diagnosing learning difficulties, grouping students for instruction, determining achievement level among others.

Classroom assessment according to Onuka and Akinyemi (2012), is one of the tools teachers can use to inform their teaching and the learning of their students. It helps to establish what students already know and what they need to learn. Assessment in the classroom therefore, is a vehicle for change; that is, making learners to notice the gap between their current performance and the target performance. On his part, Afemikhe (2014) averred that assessment types are now examined along the dimension of how the information generated can be useful to those in the classroom and education in general. Classroom assessment is generally divided into three types: assessment for learning, assessment of learning and assessment as learning.

The Purpose of Classroom Assessment

Classroom assessment practices are deeply rooted in societal expectations. Massive cultural, social, economic, political, environmental, and technological changes have meant that every facet of schooling has been subjected to investigation including classroom assessment. There is considerable evidence that assessment is a powerful process for enhancing learning. For example, Black and William (1998) synthesized over 250 studies linking assessment and learning, and found that the intentional use of assessment in the classroom to promote learning and improve students' achievement. Increasing the amount of time on assessment, however, does not necessarily enhance learning. Rather, when teachers use classroom assessment to become aware of the knowledge, skills, and beliefs that their students bring to a learning task, use this knowledge as a starting point for new instruction, and monitor students' changing perceptions as instruction proceeds, classroom assessment

promotes learning (Gipps, 2002).

When learning is the goal, teachers and students collaborate and use ongoing assessment and pertinent feedback to move learning forward. When classroom assessment is frequent and varied, teachers can learn a great deal about their students (Clarke & Gipps, 2000). They can gain an understanding of students' existing beliefs and knowledge, and can identify incomplete understandings, false beliefs, and naïve interpretations of concepts that may influence or distort learning (Victoria Department of Education and Training, 2013). Teachers can observe and probe students' thinking over time, and can identify links between prior knowledge and new learning. Learning is also enhanced when students are encouraged to think about their own learning, to review their experiences of learning and to apply what they have learned to their future learning. Assessment provides the feedback loop for this process.

When students (and teachers) become comfortable with a continuous cycle of feedback and adjustment, learning becomes more efficient and students begin to internalize the process of standing outside their own learning and considering it against a range of criteria, not just the teacher's judgement about quality or accuracy. Classroom assessment plays a major role in how students learn, their motivation to learn, and how teachers teach. Quality issues (reliability, validity, and record-keeping) are important in any classroom assessment (Earl, 2003).

For classroom assessment to be effective, it must be in accordance with the following principles as outlined by the National Research Council (2001).

It should be: incorporated in the planning of learning and teaching; focus on how students learn; recognized as germane to classroom practice, recognized as a key professional skill for teachers; sensitive and constructive. Other are it should: promote commitment to learning goals; take into consideration the learners' motivation; develop learners' capacity for self-assessment; recognize the full range of achievement of all learners; and aid learners to receive constructive guidance about how to improve learning.

Assessment For Learning (AFL)

Assessment for learning is an ongoing process that help to monitor students' learning in order to help teacher/educators improve their teaching and students to improve their learning. It also helps students manage their learning as it is on continuous basis. The assessment result is not used mainly for grading but it is used to determine the next teaching and learning steps in order to improve the teaching learning process. Hence, it is also seen as formative assessment (IOWA Department of Education, 2015). Examples of task that can facilitate assessment for learning includes: concept maps, progress/monitoring reports, checklist/survey, interviews, observations anecdotal records, research proposals quizzes, home works, work sheets, performance task, essay, questioning strategies, projects, self-assessment/ peer assessment, collaborative assessment and so on.

The emphasis in assessment for learning is a shift from summative to formative assessment. It occurs during the learning, often more than once, rather than at the end. Assessment for learning facilitates students understanding of what they are to learn, the expected learning behaviour, feedback mechanism and suggestion on ways to improve their work. According to Davis (2000), assessment for learning is ongoing, and requires deep involvement on the part of the learner in clarifying outcomes. Monitoring on-going learning, collecting evidence and presenting evidence of learning to others. Furthermore, any assessment that directly support learning has five key characteristics: learners' involvement;

learners' self-assessment; learners' ability to collect, organize and communicate evidence of their learning with others; adjustment of instruction to conform with ongoing assessment, and provision of a safe environment which allows risk taking, encouraging learning from mistake, enable focused goal setting and support thoughtful learning.

In assessment for learning, the teacher uses assessment as an investigative tool that will determine the level of assimilation of learning and their difficulties, perception as well as proffers solutions to the problems (Earl,2003).

The Role of the Teacher in Assessment for Learning

According to Earl and Katz (2006), for assessment for learning to achieve the desired outcomes, the teacher should: help in aligning instruction with the learning objectives; identify particular learning needs of the students or groups; help in selecting and adapting materials and resources; helping to create differentiated teaching strategies and learning opportunities for helping individual students move forward in their learning; provide immediate feeds back mechanism and direction to students; use assessment for learning to motivate students and to enable commitment to learning; and guidance about how to improve learning

Assessment of Learning (AOL)

This measures what and how well the students have learned at the end of instruction. It certifies learning and measures student's overall achievement/ proficiency. It determines whether learning goals and outcomes have been achieved. Summative assessment serves the purpose of assessment of learning. Examples of task that can be carried out in assessment of learning are, final performance task, final paper/ written reports, final oral presentations, standardized test, end of unit test or projects, recitals, long examinations, periodical test, and final examinations. It is designed to provide evidence of achievement to parents, teachers and the students and sometimes to others outside the school setting, for example, employers or other educational institutions. It is also usually made public and result in statement issued about how well students are learning. It often contributes to the final decisions that will affects students' future (Earl, 2003)

The Role of the Teacher in Assessment of Learning

According to Earl (2003), teachers are saddled with the responsibility of reporting accurately and fairly students learning based on evidence from the series of instruction carried out. Therefore, the teacher's role in assessment of learning includes: undertaking a particular assessment of learning at a particular point in time.; provision of clear description of the intended learning. That is, providing the enabling process for students to demonstrate their competences and skills; provide a range of alternative mechanism for assessing the same outcomes; provision of transparent approaches to interpretation, and strategies for recourse in the event of disagreement about the decision.

Assessment as Learning (AAL)

This is an on-going process of learning that helps students to self – reflect, monitor their own learning and adjust their learning strategies in order to achieve their goals and become more self-directed, metacognitive, independent and successful learners (Earl & Katz 2006). Assessment as learning also serves the same purpose as formative assessment. In this case, students are able to learn about themselves as learners and become aware of how they learn. It also helps students to reflect on regular basis their work, usually through self

and peer assessment and decides what their next learning will be. This they can achieve with the help of the teachers.

Assessment as learning also help student to take more responsibility for their own learning and monitoring future direction. It fosters metacognition. That is, helping the students to see the purpose of learning concepts and skills to assess the strategies to be employed in learning the concepts and skills, evaluate themselves if actually they are understanding the concepts, fathom out the criteria for improving their work and to ascertain if they have actually accomplished the goals set for themselves. Examples of tasks that depicts assessment as learning are: journals, self-assessment, peer assessment and personal learning logs.

The Role of the Teacher in Assessment as Learning

According to Earl (2003), the teacher's role in assessment as learning includes: guiding the students in developing internal feedback or self-monitoring mechanisms to validate and question their own thinking; provision of regular and challenging opportunities to practice, so that students can become confidents, competent self- assessors; monitor students' mega cognitive processes as well as their learning; and create an environment where it is safe for students to take chances and where support is readily available.

According to Heick (2018), assessment generally has three categories: assessment before instruction (pre-assessment), assessment during instruction (formative assessment) and assessment after instruction (summative assessment). According to him, the difference between assessment for learning and assessment of learning is a matter of function and purpose. That is, a matter of "who". Assessment of learning is a way to see what the student can do while assessment for learning is a way to see what the teacher should do to ensure student master what they are taught.

Conclusion

Although many innovations have been introduced to the educational systems, few have had a fundamental effect on what happens in the classrooms. Change requires learning. Nothing can really change in schools unless teachers and administrators have learned new knowledge and skills, and are able to transfer that learning to the classroom. Thinking about assessment as a major facilitator of learning is likely to be one of the most significant changes in classroom practice. This change will challenge many educators' fundamental beliefs about their work and about education, and it will require of them new knowledge and skills.

Suggestions

For Classroom assessment also known as internal assessment to achieve the desired goal, there is the need for assessment of learning, assessment as learning and assessment for learning to be utilized by the teachers and students. When classroom assessment is frequent and varied, teachers can learn a great deal about their students, and it will have a positive impact on society. Based on this, it is suggested that:

- the teachers should be trained on the art of identifying particular learning needs of the students, as well as providing immediate fees back mechanism and direction to students
- teachers should provide a range of alternative mechanism for assessing the same outcomes and approaches that are transparent so as to yield better interpretation

- there should be provision of regular and challenging opportunities to practice for the students, so that the students can become confidents, and competent self-assessors.
- teachers should create an environment where it is safe for students to take chances and where support is readily available.

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STUDENTS' ATTITUDE AS A DETERMINANT OF BASIC GENERAL MATHEMATICS PERFORMANCE IN FEDERAL COLLEGES OF EDUCATION SOUTHWEST, NIGERIA

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Abstract
The study investigated students' attitude as determinants of Basic General Mathematics Performance in Federal Colleges of Education Southwest, Nigeria. To this end, students' scores in Basic General Mathematics were collated for four hundred students of 200Level using Taro Yamane' formula for sample size. These students were proportionately sampled from the selected Federal Colleges of Education. The study employed a descriptive survey research type using single structured questionnaire titled Basic General Mathematics Students' Attitude Questionnaire (BGMSAQ) that contained ten items. A research question was raised. The internal consistency of the instrument was calculated 0.86. The data collected were analyzed using mean score and standard deviation. The findings of this study showed that a weighted mean of 3.07 out of the maximum obtainable of 4.00 which higher than the standard mean of 2.5. It implies that the students' attitude towards Basic General Mathematics in Federal Colleges of Education, Southwest Nigeria was positive. It was concluded that students' attitude should be encouraged and maintained. It was recommended among others, that lecturers are to work harder to give class exercises and assignments to students in order to keep them busy such that their attitude towards work is maintained.

Keywords: Students' Attitude, Basic General Mathematics, Students' Performance

Introduction

The study of Mathematics has virtually cut across all the fields of knowledge because of its importance in all careers of life. Many scholars such as Davis (2017), Lee Lockheed (2017), Mohamed & Waheed (2017) have researched on what Mathematics can do, interest of learners or students towards teaching and learning of Mathematics.

Mathematics is a universal subject; the knowledge of it is not only necessary for successful schooling but also unavoidable for human survival in everyday life. There is hardly any field of study where Mathematics is not useful Constantine (2019). The farmers, carpenters, hunters, housewives and so on make use of it even though they may not be aware of it. The importance of Mathematics in its ramification cannot be overemphasized in our present scientific and technological age.

Mathematics is universal not only in the way it influences the sciences, engineering and technology but also in its influence on day to day activities Dahir & Stone (2017). Mathematical skills are utilized in areas like painting, music, management information systems, traffic control, accounting and wide range of application Davis, (2017). In recognition of its usefulness, the federal government of Nigeria through the national policy on education made Mathematics one of the core subjects to be offered at the both primary and secondary school level of education Davis, (2017).

Mathematics with its utilitarian value in buying and selling, record keeping, understanding, appreciating nature, critical thinking and logical reasoning has the potential to sustain students' interest in the formal school system Gargus (2016). Similarly, Mathematics remains the pivot on which any science cannot succeed without going through Mathematics demonstration Harrison (2019). The usefulness of Mathematics is also displayed in other fields of study as well as in human activities such as arts, social sciences, religions, mysticism commerce, war and personal life Lee & Lockheed (2017). It has been found out that the decorative art has contributed immensely to the appreciation of geometry, religion and commerce which led to the development of number, while war led to the interest in Mathematics programming and so on Lee & Lockheed (2017).

Unfortunately, students' performance in this important subject over the years has not been encouraging at the primary, secondary and tertiary levels of education in Nigeria. Mathematics is essential not only in related fields like engineering but also in other fields such as fashion, sports, economics, music, astronomy, medicine, and agriculture, among others. Mathematics, in each year level under the new curriculum, is composed of number sense, patterns and algebra, measurement, geometry, statistics and probability but with an increasing level of difficulty. Mayers, (2017). In this sense, students are expected to master the skills in lower Mathematics so that they could learn the concepts of higher Mathematics.

In order to function in a mathematically literate way in the future, students must have a strong foundation in Mathematics. A strong foundation involves much more than the rote application of procedural knowledge. Students must be able to communicate their reasoning, the flexibility of thinking that will allow them to tackle new areas of Mathematics and be willing to continue in doing Mathematics Menshah, Okyero & Juranchi, (2015) Students' negative attitude toward Mathematics, fear of Mathematics, inadequate qualified teachers and inadequate teaching materials were some of the causes of poor performance in Mathematics Obodo, (2017). Developing positive attitude, motivation and proper guidance toward Mathematics and provision of relevant teaching materials could make students perform better in Mathematics.

Report of NCCE, in response to the mandate given by the Federal Ministry of Education, there was a curriculum review in 2020, which is the current document being used in the Colleges of Education. This curriculum is called the minimum standard of 2020. This also met the demands of the Universal Basic Education (UBE). In the review, relevant subjects such as Mathematics, English, and Computer Education are made compulsory for all NCE students. The exposure of students to these subjects is supposed to enable them teach

the subjects effectively at the primary school and junior secondary level. The subjects are designed in the NCE curriculum in the form of General Studies Education (GSE) are core courses and must be passed by every prospective NCE holder Mohamed, & Waheed, (2017).

Assessment of students in Basic General Mathematics just like the assessment of students generally in a particular course in schools is made up of two parts, continuous assessment (CA) and examination perse. Continuous assessment is the process of assessing the students as the program progresses. It could be formative and summative. The advantages of continuous assessment are: to reduce or remove the anxiety provoking nature of one-short assessment that was meted on learners and teachers and also to reduce examination malpractice Mohamed, & Waheed, (2011). However, it has been discovered that raw continuous assessment scores are most times higher than the examination scores. In other words, teachers sometimes award continuous assessment scores without actually assessing the students, thereby introducing bias and errors in measurement. Based on this, the researcher deemed it necessary to analyze the Basic General Mathematics performance using the continuous assessment scores and examination scores.

Students' attitude towards Basic General Mathematics contributes significantly to College students' performance in Basic General Mathematics in Nigeria. It was observed that both in-service and pre-service College students studying Basic General Mathematics should be made aware of the impact of their attitudes towards their performance in Basic General Mathematics. College student' experiences and their feelings towards learning Basic General Mathematics are usually constant and take a long time to change simply because of large class Wilmot & Otchey (2012). Basic General Mathematics can be useful and helpful outside the College. From the measurement unit, the topic of circle was the only topic taught in context and this may not have given enough insight to the students about studying Basic General Mathematics. Students read meanings in their minds about curricular subjects even before they learn anything or realize the importance of the subject. A certain percentage of students still wanted to avoid studying Basic General Mathematics during their education because their class usually large. NCE 1 students might have formed a negative meaning in their minds about what they may have previously heard from other students or due to their unfavourable experiences in Basic General Mathematics class. This could also be the reason for the decrease in the percentage of students not considering Basic General Mathematics to be helpful Sarmah, & Puri, (2014).

Students who are taught using a sporting context may feel that the task is more enjoyable since it is different from repetitive Basic General Mathematics exercises. Basic General Mathematics to the sports fields can provide a context for measurement, estimation and tessellation in General Studies Education Mathematics problem Wilmot et al, (2012). If students had played a game such as basketball, then that experience could provide a visual model to help them decide what Basic General Mathematics is needed to solve the problem. Since sports are often a part of students' everyday life, they don't have to deal with an enormous amount of information and feel more engaged in the tasks Mohamed et al (2011). Students feel at ease in solving mathematical problems in context because problems can be solved at different levels and in different ways. Mohamed et al (2017), Sarmah, & Puri, (2014). Students are often able to solve problems using their own informal strategies rather than the formal procedures they are unsure of. Students are able to represent the task using their own symbols and words before carrying out further solving and interpretation. Joseph, (2013).

The impact of using mathematical games on college students' attitudes towards

learning Basic General Mathematics was also reported. A pre-post design method was used to assess students' perception of the learning environment and their attitude towards learning Basic General Mathematics Recber, Isiksal & Koc (2018). Eight classes out of thirty three used a games context. The students from the classes that used games found their lessons more interactive, got involved and enjoyed learning Basic General Mathematics Recber et al (2018).

Researchers have identified important factors that contribute to students' attitudes towards learning Basic General Mathematics. These include the students themselves, the school, the teachers' beliefs and attitudes and their teaching methods. Mohamed, & Waheed, (2017), Akubuiro, & Joshua, (2014), Sarmah & Puri, (2014) & Mohamed & Waheed, (2011). The teachers' teaching methods have a major influence on students' attitudes. Teachers can do many things to facilitate the classroom learning to alleviate students' engagement level and confidence in teaching Basic General Mathematics. Mohamed, & Waheed, (2017).Wilmot & Otchey, (2012). Teachers can find ways to encourage student engagement and confidence in learning Basic General Mathematics. This can be achieved by implementing meaningful activities embedded in real-life contexts Wilmot, & Otchey, (2012), Akubuiro, & Joshua, (2014).

This may be due to ineffective classroom management and control by the teachers who are already inundated by the exploded learners' population. This may be the reason why lecturers in Basic General Mathematics feel no concerned about affective development of the students Akubuiro, & Joshua, (2014).

It therefore becomes imperative to carry out a critical study of the NCE students' performance in Basic General Mathematics courses and also to empirically justify if knowledge of Basic General Mathematics can be used to determine Federal Colleges of Education Mathematics students' attitude as determinants of Basic General Mathematics performance in Southwest Nigeria.

Students' performance in Basic General Mathematics seems to be at variant with those who are students studying Mathematics as a course in Federal Colleges of Education. This has generated lots of concerns to students offering Mathematics as a course. To the extent that, sometimes students of Mathematics stop attending classes because of their mates disposition to teaching and learning of Basic General Mathematics. Moreover, Mathematics students' attitude towards Basic General Mathematics is sometimes questionable as there seems to be no interest in the course. And without a pass in the Basic General Mathematics, the students will not graduate being a compulsory course for all students to pass. Also, being the minimum standard of National Commission for Colleges of Education (NCCE).

Studies have been carried out on students' attitude towards teaching and learning but not on Basic General Mathematics Performance in Colleges of Education, Southwest Nigeria. Therefore, the problem of this study is to examine Federal Colleges of Education Mathematics, students' attitude as determinants of Basic General Mathematics performance in Southwest, Nigeria.

Aim and Objectives of the Study

The aim of this study is to examine Federal Colleges of Education Mathematics, students' attitude as determinants of Basic General Mathematics performance in Southwest, Nigeria.

Specifically, the objective of the study was to;

i. examine the level of Basic General Mathematics, students' attitude to Mathematics academic performance in Federal Colleges of Education, Southwest Nigeria

Research Question

i. What is the Mathematics students' attitude towards Basic General Mathematics in Federal Colleges of Education, Southwest Nigeria?

Method of Data Collection

The researcher collected a letter of introduction from the Head of Department of Mathematics Education, Lead City University to the Federal Colleges of Education selected for the study. The researcher sought permission from the authorities of Basic General Mathematics Departments that were selected for the study before proceeding with the administration of the instruments. Students' scores in the Basic General Mathematics Departments were collected.

Research Design

The study was a descriptive research design type, which employed survey method in the collection of data.

Population

The population consisted of twenty thousand six hundred and eight three (20,683) students of Basic General Mathematics across all Federal Colleges of Education, Southwest Nigeria.

Sample and Sampling Techniques

The researcher used the proportionate sampling technique to select four hundred NCE 2 students from selected Federal Colleges of Education, Southwest Nigeria.

COLLEGE NAME	NCE 2	TOTAL
Adeyemi College of Education, Ondo	1,513	96
Federal College of Education (Special), Oyo	2,012	128
Federal College of Education, Osiele, Abeokuta.	2,025	129
Federal College of Education (Technical), Akoka	729	47
TOTAL	**6,279**	**400**

From the table above for NCE 2, one thousand five hundred and thirteen students come from Adeyemi College of Education; two thousand and twelve (2012) comes from Federal College of Education (Special) Oyo. Two thousand and twenty five (2025) from Federal College of Abeokuta, and Seven hundred and twenty nine (729) from Federal College of Education Akoka, Lagos by proportionate 96, 128, 129 and 47 students were picked respectively totaling 400 students.

Instrument and Reliability Coefficient

This study used single structured questionnaire titled Basic General Mathematics, Students Attitude (BGMSAQ) across all the four Federal Colleges of Education, Southwest Nigeria.

I. Basic General Mathematics Students' Attitude Questionnaire (BGMSAQ).

The instrument will be self-designed to elicit information from students on Basic General Mathematics, students' attitude and class size. The questionnaire will be divided into three sections: Section A, B and C. Section A provides demographic information of the respondents such as College name, students NCE level, gender, average class size for Basic General Mathematics students and age while section B contains 10 items carefully worded statements to elicit responses from students on Basic General Mathematics, the items will be structured along four-point modified of At all times (AT), Sometimes (S), Rarely (R), Never (N). Section C contains 10 items carefully worded statement to elicit responses from students on students' attitude; the items will be structured along four-point modified Likert scale of Strongly Agreed (SA), Agreed (A), Strongly Disagreed (SD) and Disagreed (D).

Validity of the Research Instruments

The research instruments will be subjected to proper validation by the project supervisor and four experts in measurement and evaluation. All corrections will be effected before administration of the instruments.

Reliability of the Research Instruments

In order to determine the reliability of the instruments, the instruments will be given to (50) fifty students in Emmanuel Alayande College of Education, Oyo. The internal consistency of the instruments is calculated using Cronbach Alpha and reliability co-efficient is 0.86.

Method of Data Analysis

Data collected will be analyzed using descriptive statistics of frequency count, tally, percentages and standard deviation. Research questions will be analyzed using descriptive statistics of mean, standard deviation.

Results

Research Question: What is the Mathematics students' attitude towards Basic General Mathematics in Federal Colleges of Education, Southwest Nigeria?

In answering this question, data on the scores obtained by students were analyzed as follow

Table 1:

Students' attitude towards Basic General Mathematics in Federal Colleges of Education, Southwest Nigeria

S/N	Items	SA	A	D	SD	Mean	Std. D
1	It makes me nervous to even think about having to solve a mathematics problem,	182 45.5%	120 30%	86 21.5%	12 2.5%	3.18	0.871
2	My mind goes blank and I am unable to think clearly when I am working mathematics.	73 18.3%	209 52.3%	104 21.7%	114 28.5%	2.85	0.75
3	I am able to solve mathematics problems without too much difficulty.	110 27.6%	165 41.3%	114 28.5%	11 2.8%	2.95	0.84
4	Mathematics does not scare me at all.	126 27.6%	189 47.3%	59 14.8%	26 6.5%	3.04	0.85
5	I am comfortable expressing my own ideas on how to look for solutions to a difficult problem in mathematics.	118 30.9%	198 49.5%	74 18.4%	5 1.3%	3.43	0.53
6	Mathematics is a very interesting subject.	113 28.3%	174 43.5%	91 22.8%	22 5.5%	2.94	0.85
7	A strong mathematics background could help me in my professional life.	130 36.6%	165 41.3%	82 20.5%	23 5.8%	3.01	0.89
8	I would prefer to do an assignment in mathematics than to write an essay.	165 41.3%	151 37.8%	68 17.0%	16 4.0%	3.16	0.85
9	I get a great deal of satisfaction out of solving a mathematics problem.	97 24.3%	224 46.7%	51 12.8%	28 7.0%	2.98	0.81
10	Mathematics helps develop the mind and teaches a person how to think and reason.	137 34.3%	209 52.3%	40 10%	14 3.5%	3.17	0.74
	Weighted mean = 3.07						

The above table revealed a weighted mean of 3.07 out of the maximum obtainable score of 4.00 which higher than the standard mean of 2.5. This implies that students' attitude towards Basic General Mathematics in Federal Colleges of Education, Southwest Nigeria is good and positive.

Discussions on the Finding

Table 1 show that the Mathematics students' attitude towards teaching and learning of Basic General Mathematics at NCE level is very good and positive. The finding deduce from this study corroborates with the work of Joseph (2013) that opined the school factors influenced the students attitude towards learning of mathematics and that of Mohamed & Waheed, (2017) which stated that college students attitudes has correlation achievement with their achievement in mathematics. It against the works of Menshah, Okyero & Juranchi,

(2015) & Lee & Lockheed (2017) discovered that the students' attitude has no significant effect on the students' achievement in mathematics.

Conclusion

Based on the result obtained in this research work, it was concluded that students' attitude should be encouraged and maintained since the students' attitude determined their achievement in Basic General Mathematics

Recommendation

It was therefore recommended that Lecturers are to work harder, give class exercises and assignments to students in order to keep them busy such that their attitude towards work is maintained.

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SECOND-CLASS EDUCATION FOR SECOND-CLASS CITIZENS? AN ASSESSMENT OF SCHOOL INFRASTRUCTURE IN URBAN AND RURAL PUBLIC SECONDARY SCHOOLS IN NIGERIA

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Abstract
The study assessed the school infrastructure in Nigeria's urban and rural public secondary schools to ascertain the level of disparities in the availability of these facilities. The study was to avoid making the students in the rural schools look like second-class citizens operationally in their own country. The research is theory-based, and adopted historical and descriptive survey research designs for the study; 162 principals of secondary schools were selected using a multistage sampling technique based on clusters of regions, states and locations. The study adopted an instrument titled Infrastructure Availability in Public Secondary Schools in Nigeria Checklist (IAPSNC) from the National Policy of Education (NPE). Data were analysed using descriptive statistics of frequency count and percentages. The findings established that in urban and rural public secondary schools, infrastructural facilities were not adequately provided but worse in rural areas. The result affirmed the observed discrepancies in the availability of school facilities between urban and rural public secondary schools. Using simple percentages and frequency counts, the findings showed that the highest percentage of availability of the basic school infrastructure was 92.86% and 93.75% for both Biology and Chemistry laboratories in urban and rural schools respectively. Conducive classroom for urban and rural schools had 85.71% and 62.50% of availability. In rural schools, availability of Technology (3.13%), Language (7.81%) and Technical (12.50%) laboratories was recorded while it was 25.51%, 12.24% and 35.71% for the same facilities in the urban schools. The researcher, therefore, recommended, among others, that basic school infrastructure be provided equally in rural and urban public schools, and stakeholders should evolve a public-private partnership in the provision.

Keywords: Second-class citizen, urban/rural areas, post-colonial, infrastructural facilities.

Introduction

It is a known fact that education, if administered effectively, is a catalyst for national development. Therefore, most nations rely on it to move their society forward. However, uniformity in the content, quality and school infrastructurefor all recipients is necessary, no matter their location either rural or urban. The school environment may also go a long way in determining the quality of teaching and learning that would take place. In part, hinging on the importance of the school environment is responsible for the Child-Friendly School Initiative (CFSI) launched by the Federal Government of Nigeria in 1999 (Yabo, 2017).

Surface observations have shown disparities in school infrastructure between urban and rural public secondary schools, even though all students will write the same final examinations, not minding their location. Such infrastructure includes but is not limited to a conducive classroom, internet facility, electricity, drinkable water, well-equipped laboratories and consumables. These facilities are necessary for studying Agriculture, Biology, Chemistry, Physics, Technical, Technology, Computer, and Home Economics.

UNESCO's (2014) observation that children's birthplace determines their opportunity to learn should not be a truism if all citizens are equal. At the inception of western education in Nigeria, schools that existed were located in the urban centres (Nwangwu 2011: 65), leaving the rural dwellers without almost all social and economic services. Therefore, dwelling in a rural area in Nigeria may conveniently qualify a person to be a second-class citizen in their own country. But the researcher will like to align with Stokes, Stafford &Holdsworth's (n.d.) submission that living outside the major population centres should not mean settling the children for an education at the second rate. In the conceptual framework of qualitative and functional education for all, this research discussed how to improve the quality of teaching and learning in public secondary schools in both the urban and rural areas in Nigeria by providing the required infrastructure as this will culminate in balanced national development.

Statement of the Problem

Regardless of their locations, citizens of any nation are supposed to have equal access to all social services, of which education is a crucial part. Living in rural areas by some citizens should not lead to being denied the infrastructure enjoyed by those residing in the urban areas. . School infrastructure must be deployed equally by the government and other stakeholders to entrench that citizens have equal rights. Government should note that the CFSI was launched in 1999 since the environment of education may affect the quality of teaching and learning that would take place. Unfortunately, most rural public schools are not beneficiaries of such an environment; they are still learning in an environment and condition that make them look like second-class citizens in their own country. Their learning environment is not the same as those in urban areas. Although this is an age-long problem, proffering a solution may not have been adequately documented in Nigeria.

Purpose of Study

This research aims to find real issues of inequality in the provision of school infrastructure and suggest a lasting solution to remove the discrepancies.

Research Questions:

This research will answer two questions to guide it in a specific direction, namely:

1. Are the school infrastructure available in the adequate and same proportion in rural and urban public secondary schools?
2. Are rural dwellers second-class citizens? If not, why are there differences in the availability of school infrastructure in public secondary schools in rural and urban areas?

Brief Historical Background to the Development of Secondary Education in Nigeria

The coming of the various missionary bodies such as the Church Missionary Society (CMS), Wesleyan Methodist Society (WMS) and the Baptist Mission (BM) into Nigeria between September 1842 and 1860 marked the recognised beginning of western education in Nigeria. These missionary bodies intended to convert Africans to Christians through western education; hence, the establishment of churches was often followed by the opening of primary schools, which made the early schools an adjunct of the church (Fafunwa,1974). Although the curricula of the mission bodies were not the same, their primary curriculum, principally, was the four Rs - Reading, Writing, (A)Rithmetic and Religion, which also served their other intention of training cooks, interpreters, teacher/catechists and messengers.

According to Adeyinka (2016), the missionaries did not intend to provide education beyond the basic school level. The idea was from the early converts and products of the early mission schools who wanted their children to have secondary education to qualify them for admission into universities in Sierra Leone, London and other nations. Subsequently, the first secondary school, Church Missionary Society CMS Grammar School, Lagos, was opened in June 1859. However, the school was a mission school by name; funds were made available by the converts who clamoured for its establishment. Other secondary schools soon emerged in various locations like Ijebu-Ode, Ibadan, Abeokuta and other cities because of the success story of CMS Grammar School. Also, all the early secondary schools were located in urban while those in the rural areas were neglected., This trend continued even after independence in 1960. Most of the secondary schools established in the rural areas were through community efforts. They got less attention than those found in urban centres established by the government or the elites.

As noted earlier, urban centres were the location of all the early secondary schools. They also provided other amenities like electricity, good roads and other infrastructural facilities that a school would need. Teachers were wary of going to the rural areas to teach because of the lack of the basic facilities that could make life worthwhile to live. Unfortunately, even inspectors of schools were sometimes not interested in supervising and monitoring what was going on in rural schools. The pressure from people not to post their wards or relatives to rural areas to teach tremendously affected the rural schools' personnel. Unfortunately, this was the beginning of urban and rural public secondary school infrastructure disparities.

The 6th edition of the National Policy on Education refers to secondary education as "Post-Basic Education and Career Development" (PBECD) (FRN, 2014:17). In the document, the objectives of PBECD are to:

a. provide holders of the Basic Education Certificate ... with opportunity for education of a higher level irrespective of gender, social status, religious or ethnic background;
b. offer diversified curriculum to cater for the differences in talents, disposition, opportunities and future roles;
c. provide trained manpower in the applied sciences, technology and commerce at sub-professional grades;
d. provide entrepreneurial, technical and vocational job-specific skills for self-reliance and agricultural, industrial, commercial and economic development;
e. develop and promote Nigerian language, art and culture in the context of the world's cultural heritage;
f. inspire students with a desire for self-improvement and achievement of excellence;
g. foster patriotism, national unity and security education with an emphasis on common ties despite our diversity; and
h. raise morally upright and well-adjusted individuals who can think independently and rationally, respect the views and feelings of others and appreciate the dignity of labour.

The curriculum of Senior Secondary Education consists of Science and Mathematics, Technology, Humanities and Bu siness Studies. The curriculum contents are listed in Table 1 below.

Science and Mathematics	Technology	Humanities	Business Studies
Biology	Technical Drawing	Christian Religious	Store Management
Chemistry	General Metal	Studies	Accounting
Further Mathematics	Work	Islamic Studies	Commerce
Health Education	Basic Electricity	Visual Arts Music	Office Practice
Agriculture	Electronics	History, Geography	Insurance
Physical Education	Auto Mechanics	Government	Any of the Trade/
Computer Science	Building Construction	Economics	Entrepreneurial subjects
	Woodwork	Literature-in-english	as listed in the policy
	Home management	French, Arabic	document
	Food and Nutrition	Any Nigeria Language that has curriculum	

Source: Federal Republic of Nigeria (2014: pp.18-21)

However, there are compulsory cross-cutting subjects such as English Language, General Mathematics, Trade/Entrepreneurial courses and Civic Education. If the objectives of secondary education and the curriculum contents are the same for both the urban and rural schools; , it then follows that the students will write the same certificate examination. In that case, the schools should have access to the same infrastructure, not minding their location. Therefore, this study focused on basic school infrastructure that cuts across the main curriculum content of secondary school level education and can facilitate effective teaching and learning that will to help achieve its objectives. Such facilities include:

i. Conducive classroom,
ii. Drinkable water,
iii. Electricity,
iv. Internet facility,
v. Agricultural Laboratory,
vi. Biology Laboratory,
vii. Chemistry Laboratory,
viii. Physics Laboratory,
ix. Technical Laboratory,
x. Technology Laboratory,
xi. Computer Laboratory,
xii. Home Economics Laboratory,

xiii. Language Laboratory, and
xiv. Laboratory consumables

Ojeje and Adodo (2018) described school facilities as a powerful and strategic factor in the functioning of any organisation and for quantitative and qualitative education. Facilities also determine how smooth the running of any social system, including education, would be; their availability, adequacy and relevance influence efficiency and high productivity. However, the lack of relevant infrastructure in public secondary schools in Nigeria, especially in rural areas, is a big challenge in implementing school programmes and education policies.

Akanbi (2016) observed that whatever name we call our policy (6-3-3-4 or 9-3-4), there is a lack of infrastructure required in the school environment, especially in government public schools, in order to implement the policy structure. Most public secondary schools lack infrastructure facilities and consumables, mainly in rural areas. Classrooms are inadequate, necessary teaching and learning materials are unavailable, and where laboratories are available, there may be no equipmentthere may be no equipment where laboratories are available, making teaching and learning difficult. Kabiru and Arshad (2016), in their study of infrastructure conditions in public secondary schools in Katsina State, also submitted that most public secondary schools lack some basic school infrastructure such as laboratory, library and electricity.

It is important to note that the problem of disparity in educational services in urban and rural areas is not peculiar to Nigeria alone. Across nations worldwide, urban schools enjoy better facilities and personnel. Benedict (n.d) observed that the constitution of Ghana stipulates that the State shall make provision for provide educational facilities at all levels in all the regions and shall, to the greatest extent, make facilities available to all citizens. Still, it remains mere rhetoric rather than reality, especially where children in rural areas are concerned. He further submitted that the basic facilities for children to access education are inferior and in deplorable conditions. Besides human resources, schools in Ghana also lack resources such as the library, computer laboratory, etc.

Sullivan, McConney and Perry (2014), in their studies, however, found that in urban Australian communities, students tend to have substantially higher achievement on Programme For International Student Assessment (PISA) than their peers in rural settings. The achievement advantage seems to be associated with inequitable distributions of school resources and teachers and, to a lesser extent, unevenness in school learning environments. In another research, Sullivan, McConney and Perry (2018) discovered that "rural educational disadvantage is more pronounced in Australia than in Canada or New Zealand".

They referred to a report by the Human Rights and Equal Opportunity Commission in Australia in the year 2000, which found that rural schooling was inferior on every indicator included in its study. Indeed, according to their report, among advanced countries, Australia has one of the most significant urban/rural achievement gaps in PISA, as students in rural Australia have long been educationally disadvantaged. This disadvantaged position of the students in rural communities in Australia makes them less likely than their urban peers to complete secondary education or attend university.

Although the grounded-theory research of Plessis and Mestry (2019) in South Africa focused on effective teaching and learning, they found that "most rural schools do not have water, sanitation, or electricity, and classrooms are in a terrible state. These issues have

profound implications for effective teaching and learning. These few examples showed that rural schools never enjoyed equity in the distribution of infrastructural facilities. Also, in the United States of America, especially in North Carolina, publicschoolfirstnc.org observed that the COVID-19 pandemic has only further highlighted the digital divide between urban and rural public schools. The organisation observed further that the challenge of the homework gap is more common for rural students during the pandemic. The challenge is because many educational resources have moved online, including textbooks and reference materials, and for those without adequate internet connection, completing assignments can be challenging or impossible. Sekoni's (2016:5) submission that "an education policy that manifests reluctance on the part of the states and local governments to provide equal learning conditions to students in the public school system needs to be reviewed and changed" is food for thought. It may be true that some governments are building new blocks of classrooms, but what are the facilities provided in these classrooms? This method of 'papering the crack' cannot continue if citizens are to enjoy quality education in public secondary schools, especially in rural areas.

SECOND-CLASS CITIZEN: AN OPERATIONAL DEFINITION

The Cambridge English dictionary (n. d.) defines a citizen as "a person who is a member of a particular country and who has rights because of being born there or because of being given rights, or a person who lives in a particular town or city".A citizen is also seen as "a person who, due to place of birth, naturalisation, or other reasons (for example, citizenship of parents), is a member of a political community or a civil state, such as a country or state, and is entitled to all the civil rights and protections thereof and owes allegiance to its government"

Who is a second-class citizen?

A second-class citizen is "a citizen, especially a member of a minority group, who is denied the social, political, and economic benefits of citizenship" or "a person whose rights and opportunities are treated as less important than those of other people in the same society". (Collins English Dictionary)

In the definitions of citizen and second-class citizen given above, nothing denotes location to define who a citizen is and who is a second-class citizen. However, in this study, the researcher uses location as a disadvantage and probably denotes second-class citizens. This is especially so, looking at the definition as "a person whose rights and opportunities are treated as less important than those of other people in the same society", and in this case, those who are in rural areas. School infrastructure is scarcely made available to the rural dwellers, and where they are available, they are either insufficient or of lesser quality. Rural dwellers in Nigeria, therefore, may be operationally qualified to be called second-class citizens in their own country.

Methodology

This section describes the research design, the population of the study, sample and sampling technique, instrumentation and procedure for data collection.

This research adopted the descriptive survey design, also known as statistical research, because it is theory-based and aimed at identifying and describing the observed

situation on the availability of basic infrastructure in public secondary schools in Nigeria. This design aligned with Jovancic's (2020) and DeFranzo's (2020) submission that descriptive survey research describes situations by gathering, analysing and presenting collected data.

The study population included all the 13,029 public secondary schools in the six geo-political zones in Nigeria; 2,159 in the North East; 2,595 in the North Central; 3,065 in the North West; 1,352 in the South East; 2,140 in the South West and 1,718 in the South-South.

The researcher adopted multistage and convenient sampling methods to select the participants for the study. Multistage sampling is a sampling method that divides the population into groups (or clusters) for conducting research. The significant clusters of the selected people are then split into sub-groups at various stages to make it simpler for primary data collection (QuestionPro, 2021). Convenience sampling (also called accidental sampling or grab sampling), according to Simkus (2022), "is a method of non-probability sampling where researchers will choose their sample based solely on the convenience". In Gall, Borg, & Gall (1996, p. 228)opinion, "researchers often need to select a convenience sample or face the possibility that they will be unable to do the study… it usually is better to do a study with a convenience sample than to do no study at all".

In the first instance, a stratified random sampling method was used to select the participants, using the stratum of the Nigerian geo-political zone. From the six zones, four zones were picked through a simple random sampling method. From the four zones, a state was picked again through a convenient sampling method based on the availability of research assistants in Yobe State. Therefore, the Federal Capital Territory (FCT), Kano, Ogun and Yobe eventually participated.

Table 2: Number of Schools Selected from Each zone

South West		**North Central**		**North East**		**North West**		**Total**		
Ogun		**FCT**		**Yobe**		**Kano**				
U	**R**	**U**	**R**	**U**	**R**	**U**	**R**	**U**	**R**	**Total**
15	**13**	**17**	**27**	**35**	**0**	**31**	**0**	**98**	**64**	**162**
Total = 28		**Total = 44**		**Total = 35**		**Total = 55**		**Total = 162**		

Note: U=Urban, R=Rural

Table 1 indicates the selection pattern for the study from public secondary schools in the selected states. Fifteen (15) Principals from urban and 13 from rural areas in Ogun State, South-West Nigeria; 17 Principals from urban and 27 from rural areas in FCT, North-Central; 35 Principals from urban and none from rural areas in Yobe State, North-East Nigeria; and 31 Principals from urban and 24 from rural areas in Kano State, North-West.

Fourteen facilities, namely, conducive classrooms, internet facility, electricity, drinkable water, and well-equipped laboratories needed for practicals in agriculture, biology, chemistry, physics, technical, technology, computer, home economics, languages and consumables were on the checklist used to collect data, and e. Each school head was requested to indicate the availability or otherwise of the facilities. A Letter of Introduction was collected from the Oyo State Ministry of Education, Ibadan, duly signed and stamped. It should be noted that the researcher encountered difficulty in collecting the data, especially

from Yobe State, due to the instability of the school calendar because of the insurgency, which was why data could not be collected from rural schools. In all, 162 public secondary schools were used, 98 in urban and 64 in rural areas. The spread of the school by location is isin Table 2.

Results and Data Analysis

Data were analysed using descriptive statistics of frequency count and percentages. These analyses were able to answer all the research questions as stated earlier.

Table 3: Percentage distribution of school infrastructure across zones and locations in

	FACILITIES	**Available**		**Not Available**		**% of Availability**		**% of Unavailability**	
S/N		Urban	Rural	Urban	Rural	Urban	Rural	Urban	Rural
1	Conducive classroom	84	40	14	24	85.71	62.50	14.29	37.50
2	Internet facility	28	10	70	54	28.57	15.63	71.43	84.37
3	Electricity	45	40	53	24	45.92	62.50	54.08	37.50
4	Drinkable water	78	48	20	16	79.60	75.00	20.90	25.00
5	Agriculture Laboratory	53	28	45	36	54.08	43.75	45.92	56.25
6	Biology Laboratory	91	60	07	04	92.86	93.75	7.04	6.26
7	Chemistry Laboratory	91	60	07	04	92.86	93.75	7.04	6.26
8	Physic Laboratory	88	58	10	06	89.80	90.62	10.20	9.38
9	Technical Laboratory	32	08	66	56	35.71	12.50	64.29	87.50
10	Technology Laboratory	25	02	73	62	25.51	3.13	74.49	96.87
11	Computer Laboratory	38	33	60	31	40.00	51.16	60.00	48.84
12	Home Economics Laboratory	37	21	61	43	37.76	32.81	62.24	67.19
13	Language Laboratory	12	05	86	59	12.24	7.81	87.76	92.19
14	Laboratory Consumables	25	30	73	34	25.51	46.88	74.49	51.12

Source: Raw Data Collected

Discussion of Findings

Research Question One: Are the school infrastructure available in the adequate and same proportion in rural and urban public secondary schools?

From the data collected as presented in Table 3, the identified facilities are not available in adequate proportion because all the schools are expected to have the facilities.

Therefore, the researcher expected 100% availability since all the schools will eventually write the same certificate examination. Unfortunately, the highest availability of any of the facilities is 92.86% in urban and 93.75% in rural schools sampled for Biology and Chemistry laboratories, respectively.

In the case of the conducive classroom, the availability percentage was 85.71% for urban and 62.50% for rural public secondary schools. The results revealed that conducive classrooms were not available in 14 urban schools out of the 98 sampled ones, while 24 were not available in rural areas out of the 64 sampled. If the classrooms are not conducive to learning, there is a fundamental problem that could affect the achievement level of the students. This is in line with Turupere's (2016) opinion that classroom space is essential to 21st century learning such that the students can work in teams, solve problems and communicate effectively. The availability proportion was not the same; it was lower in rural schools than in Nigeria's urban public secondary schools. Though the availability is higher in urban schools, it is still inadequate for effective teaching and learning.

It is good to note that in the face of the new normal globally, in the education sector, the availability of internet facilities is not a luxury; it must be available if students are to have meaningful learning. The result showed that internet facilities were unavailable in 70 (71.43%) urban schools out of the 98 sampled, while 54 (84.38%) had no internet facility in rural areas out of the 64 sampled.

The world is now a global village through technological development; therefore, for any nation not to focus on technology in her schools may spell doom for such. It is important to note that students must be exposed to technology early enough to blend and adapt to any society they find themselves. The results revealed that technology laboratories are unavailable in 73 (74.49%) urban schools out of the 98 sampled, while 62 (96.87%) out of the 64 sampled rural schools had none. Education for self-reliance is trending today, and this is because governments worldwide cannot provide jobs for countless graduates that are turning out of higher institutions of learning. Production of graduates that will be self-reliant and become job creators and providers is what the nations are clamouring for, especially in a developing country like Nigeria; therefore, technical education should not be handled with levity. On the contrary, however, the result revealed that technical laboratories are not available in 66 (64.29%) urban schools out of the 98 sampled. In comparison, 56 (87.50%) of the 64 sampled rural schools have no technical laboratories.

Language is a distinguishing feature of any culture and is undoubtedly an effective tool for meaningful education or transmission of culture from one generation to the other. Therefore, where there is a language problem, hardly would the education system survives or progresses. The National Policy on Education (FRN,2014, section 1, paragraph 8g) talks about the importance of language and that every child must learn one of the three Nigerian languages: Hausa, Igbo and Yoruba. Although implementing language policies in a multilingual society such as Nigeria has always been arduous, it must be done in the conceptual framework of indigenisation of education in Nigeria. Political will or intense government action can effectively enhance the implementation of language policy through the provision of required facilities. Unfortunately, the results revealed that the language laboratory was unavailable in 86 (87.76%) urban schools out of the 98 sampled, while 59 (92.19%) out of the 64 sampled rural schools had no language laboratory.

If laboratories are available without consumables, it amounts to being unable to use them effectively. Table 3 revealed that laboratory consumables are unavailable in 73

(74.49%) urban schools out of the 98 sampled, while 34 (53.12%) schools in rural areas out of the 64 sampled had no laboratory consumables.

Research Question Two: Are rural dwellers second-class citizens? If not, why are there differences in the availability of school infrastructure in public secondary schools in rural and urban areas?

There is nothing to suggest in the definition of a citizen that rural dwellers of any country are second-class citizens. However, from the definition of second-class citizen, and in the light of the findings of this research as revealed in Table 3, that the unavailability of most of the facilities selected for the study was higher in the rural areas, which leaves much to be desired. The result implies that the rural dwellers' rights and opportunities are being treated as less important than those of other people in the same society who are in urban areas, making them operationally qualify as second-class citizens.

Why then the differences in the provision of school infrastructure in the public secondary schools in rural areas? The difference is the outcome of the Missionary/Colonial policy of establishing their presence only in the urban centres. All public secondary schools established in the colonial era were located in the urban centres ignoring the rural areas, probably not wanting to expend money in places they could not live. This policy consciously or unconsciously continued into the post-colonial era in Nigeria, which was partly responsible for the rural-urban migration. Students from rural areas who wished to continue their education up to the secondary school level had to relocate to cities where such schools were located.

Conclusion and Recommendations

The ways out of the perceived inequalities in providing infrastructure in public secondary schools in urban and rural areas are not exhaustive, and researchers must not be timid in making their findings known to the public. It is necessary to call the attention of stakeholders to the deplorable environment in which students learn in our research. On this note, the following recommendations and suggestions are worthwhile to improve school infrastructure in public secondary schools in rural areas.

As a foundation, there is a basic need for reorientation in our society, especially for those who are privileged to occupy leadership positions. Political leaders should be fair to the people in rural communities. During political campaigns and elections, they always find their way to the rural areas, but after elections, most forget that rural dwellers exist; this is unfortunate and should be redressed.

Leaders of government in each state should impress upon the personnel in the Ministry of Education and all other stakeholders equitable distribution of facilities in rural and urban public secondary schools. There should be School-Community relations to enhance public-private partnership (PPP) in the provision of school infrastructure since education is a considerable investment, and the government alone may not be able to bear the cost. UNESCO's (2022) submission that though voluntary, community members can get involved by participating through "special activities or events like supporting the construction, rehabilitation, and maintenance of adequate, inclusive and gender-responsive school infrastructure, facilities, and furniture" (para. 2) is therefore relevant. For this reason, schools must establish excellent and harmonious relations with the community.

No nation can achieve education for self-reliance on paper; its implementation must be in practical terms. Sanga (2016, para. 2) submitted that a significant objective of

education for self-reliance is to "equip learners with knowledge, skills and attitudes for tackling societal problems". It becomes incredibly urgent and necessary to provide technology and technical laboratory in public secondary schools, especially in rural areas, to lessen rural migration and improve the learning environment.

At this juncture, it is worthwhile to conclude with the observation of Sigsworth & Solstad (2005), in Britain that schooling in the rural areas should be a "national responsibility" and that it is beyond question that small schools are a vital element in rural life. They submitted further that,

> *Not for nothing is the village school referred to as 'the heart of the village'. It educates the young, contributes to social and cultural life and acts as a gravitational force to retain and attract families. Small rural schools and their communities deserve support based upon informed, more sensitive and more coherent policies than are presently apparent* (p.62).

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