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Contents

Pedagogy of Conscientization: Dividends and Lessons Derived from Political Discussions among Adult Learners through WhatsApp Social Media Platform

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Abstract

This paper reported the outcome of a study on adult learners ' participation in political discussions through WhatsApp social media platform arising from the gap in literature. The case-study research design was adopted and anchored on Paulo Freire's Theory of Radical Conscientization and the O-S-R-O-R model developed by Cho, Shah, McLeod, McLeod, Scholl, & Gotlieb, (2009). The study's population comprised 45 respondents who had completed post literacy classes organised by the Department of Adult Education, University of Ibadan and are being prepared for Junior WAEC by the Department. However, the sample comprised 28 respondents who met the inclusion criteria specified for participation in the study. Political Participation Dividends through WhatsApp Questionnaire (PPDQ) {r=89) was used to obtain data which were analysed through simple percentages Findings showed that the political critical consciousness level of the participants, measured from eight clearly identified dividends, was raised and lessons inherent from this were discussed. However, some unintended variables were recorded in the study. The study concluded that WhatsApp social media platform remains a veritable platform for sensitizing, conscientizing, and raising people's knowledge level of democratic political ideals. Based on the findings, the study recommended, among others, that the Independent National Electoral Commission (/NEC), the body responsible for the conduct of elections in Nigeria, needs to urgently and aggressively mount an enlightenment and sensitisation campaigns against vote buying. Similarly, the National Mass Education Commission, together with the State Agencies, must begin campaign on "War against Vote Buying" and incorporate it into their advocacy programmes.

Key Words: Conscientization, Dividends, Pedagogy, Political Discussion, WhatsApp Platform

Introduction

The advent of social media has helped make real the idea of a "global village", first put forward by communications theorist Marshall McLuhan in the 1960s. Social media's quick development into an important way to influence society is part of the advancement of information and communication technologies.

It is universally known that social media have become an integral part of public discourse and communication in the contemporary society. They have had major effects on fields such as advertising, public relations, communications, and political communication (Husain, Abdullah, Ishak, Kamarudin, Robani, Mohin, Hassan, 2014).

The prominence of social media has been particularly highlighted in politics; however, there have been conflicting research reports on whether social media play significant role in politics and political discussions. For example, Stieglitz and Dang-Xuan, (2012) asserted that "the use of social networking sites (Facebook) and microblogging services (Twitter) are believed to have the potential of positively influencing political participation". Two widely cited examples in support of this are the 2009 Iranian protests against the re-election of Mahmoud Ahmadinejad (Carlisle and Patton, 2013), and the Egyptian social movements augmented by Twitter and Facebook, when President Mubarak shut down the Internet for five days (Yang, 2013).

Conversely, other researchers have revealed that the use of social networking sites is not at all linked to higher levels of political participation (Gil de Zfilliga, Molyneux, & Zheng, 2014), Baumgartner & Morris, 2010). This simply connotes that discussions of social media use on political participation are inconclusive calling for further research. This prompted the justification for this study to find-out the dimensions and dividends inherent in the use of a social media platform-WhatsApp-to stimulate political discussions among adult learners in a post literacy class in Nigeria.

Statement of the Problem
Almost all studies available in literature show that the involvement of participants in the discussion of issues of national interest through the social media platforms is limited to youth. Besides, the notable social media platforms used by these researchers were Facebook, Twitter, Youtube, and Instagram. Therefore, there is an observable gap in literature involving adult learners' participation in political discussions through WhatsApp social media platform. In other words, studies on the use of WhatsApp to stimulate political discussion among adult learners are still extremely scarce. This study, therefore, focuses on the use of WhatsApp to fill this gap.

Objectives of the Study
The specific objectives of the study were, to:
1. Identify the dividends that the respondents enjoy in their participation in the study.
2. Ascertain the non-dividends recorded in the study
3. Enumerate the lessons derived from the conduct of the study?

Research questions
1. What dividends did the respondents enjoy in their participation in the study?
2. What are the non-dividends recorded in the study?
3. What lessons were derived from the conduct of the study?

Literature Review
Social Media: Description and Uses
Social media are new information network and information technology utilising interactive and user-produced content to create and maintain interpersonal relationships. Typical social media network services could be content sharing, web communities, and Internet forums. Kaplan & Haenlein (2010) defined social media "as a collection of internet-based applications that expand the ideological and technological foundations of Web 2.0 and that permit the creation and exchange of user- generated content". Social networking sites are the interface between people and social media and for many the 'Internet' is synonymous with social networking sites (Hinton & Hjorth, 2013).

One of the most interesting characteristics of social media is represented by the term "user-generated content", which refers to different forms of media content, publicly available and created by end users (Kaplan & Haenlein, 2010). Therefore, people use social media not only to consume online information but also to produce unique content themselves and transforming from content "consumers" to content "producers" (Gil de Zufliga, Molyneux, & Zheng 2014). Habermas, (1989) argued that "social media imitates a structural public

sphere **as an** arena where citizens discuss public affairs». Public spheres are theoretically necessary to assess the functionality of participatory democratic govemments {Brenne, 2016).

Usage of WbatlApp a1 a Sodal Media Platform for Political Discussions

WhatsApp is a mobile application for providing instant messaging service in smartphones. It uses Internet services to communicate different type of text and multimedia messages between users or groups. Its users worldwide have mobile apps worldwide.

crossed the figure of one billion as at February 2016 (Kumar & Sharma. 2017). The graph below shows the growth of WbatsApp users from 2013 to 2016. The statistics shows a timeline with the amount of monthly active WbatsApp users worldwide as at February 2016. *AB* of that month, the mobile messaging app announced more than 1 billion <u>monthly</u> active users, up from over 700 million in January 2015. This implies that WbatsApp is one of the most popular

Number of monthly activeWhatsApp users worldwlde from Aprll 2013 to February 2016 (in milli ons)
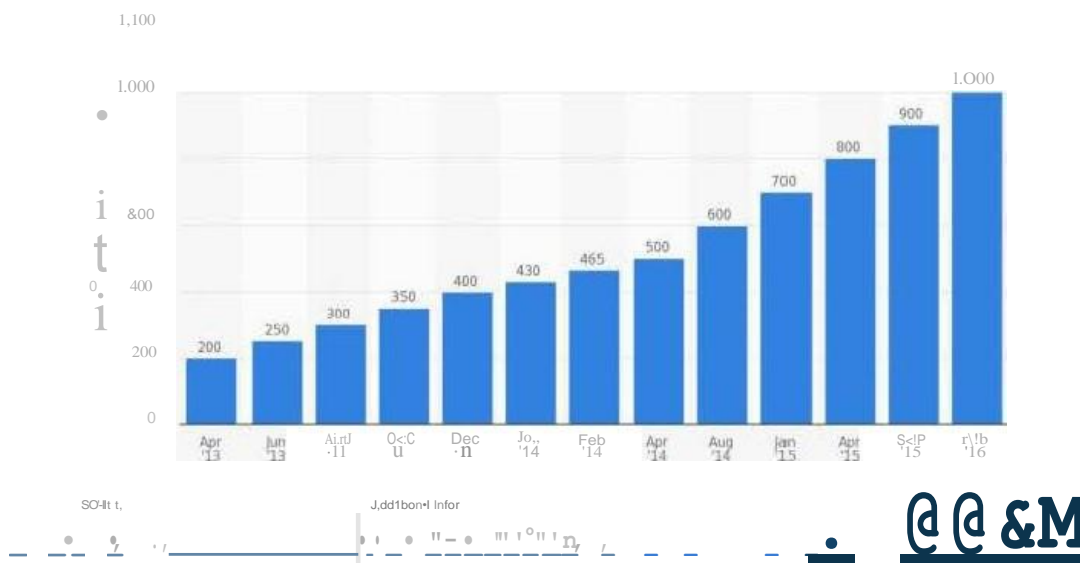
Source: Kllmar & Sharma, 2017 "Survey Analysis on the usage and Impact of WhatsApp Messenger".

With whatsapp messenger, communication, through mobile phones, has become easier, faster and cheaper. It is less expensive compared to the normal phone messaging. An individual can chat with mends and family overseas through whatsapp without having to incur global SMS charges (Y eboa.h and Ewur, 2014).

Various studies and analysis have been done on the usage and impact of WhatsApp. However, most of these studies were not focused on political discussions. For example, in a study on "Usage of Wbatsapp as a Social Media Platform among Undergraduates in Kwara

State". Akintola, Bello, & Daramola (2017) found that the use of WhatsApp was the most favourite among undergraduates in the state (174) while Facebook came second (94).

A study conducted by Abad and Lim (2014) revealed that WhatsApp benefited the Wldergraduate *students* in Malaysia by enabling them to discuss and share information pertaiDmg to their studies, as well as facilitate their everyday communication with friends and family. Alshammari, Parkes, & Adlington, (2017) in their study "Using WhatsApp in EFL Instruction with Saudi Arabian University Students" found WhatsApp as the most active social media platform used in Saudi Arabia for

the teaching and learning of English **as a** foreign language. This was in agreement with the submission of Jain, Luaran, & Rahman, (2016) when they asserted that "with this functionality, WhatsApp is a useful learning tool that makes posting, sharing content and engaging in online discussions easy and available anywhere and anytime.

In another study "Social Media Use and Participatory Politics among Students in Universities in Nairobi" Mbetera, (2015) found that "youth with regular use of WhatsApp express their political and policy preferences by engaging themselves and political actors directly through the social media platform. They were able to post their opinions which contributed enormously to political discourses.

Moura and Michelson, (2017) in their study "WhatsApp in Brazil: mobilising voters through door-to-door and personal messages" found that through the use of the WhatsApp smartphone app and a series of messages developed by real candidates, there was a large increase in voter turnout among younger voters randomly assigned to receive WhatsApp video messages. They concluded that WhatsApp remains a powerful voter mobilisation tool in Brazil.

It can be concluded from these past studies that WhatsApp satisfies a wide range of needs including intimacy, growing relationships among friends, heightening a sense of presence in communication and providing a private channel where members can interact freely with each other.

However, despite the positive aspects attributed to WhatsApp, other studies have revealed some negative impacts of the medium. In Ghana, for example, a study conducted by Yeboah and Ewur (2014) concluded that WhatsApp impacted the performance of tertiary institutions students negatively. The study concluded that WhatsApp usage leads to lack of concentration in lectures, time wastage, causes the students not to complete their assignments, and spoils their spellings and grammatical sentence construction. However, the said study did not focus on WhatsApp as a communication medium but focused on students• learning outcomes.

From the above reviewed studies, it is seen that the focus on WhatsApp studies has been on how different users utilise it and the effects that come from the usage.

Theoretical framework/Model
Paulo Freire's Theory of Radical Conscientization

Literature reviewed above can be summarised as emphasising the conscientization of citizens for political knowledge, participation, and persuasion through the social media. It is on this basis that the theoretical framework adopted for this study is Paulo Freire's theory of radical conscientization propounded in his book *Cultural Action for Freedom* (1970a), *Pedagogy of the Oppressed* (1970b) and expanded in his subsequent books: *Conscientization and Liberation* (1972) and *Education for Critical Consciousness* (1973). The **O-S-R-0-R** model, developed by Cho, Shah, McLeod, McLeod, Scholl, & Gotlieb, (2009), was adopted as the conceptual model.

Freire, in this theory, often described as powerful in its optimism, distinguished humanization from dehumanization. He argued that "true humanization takes place in the world only when each person becomes conscious of the social forces working upon him or her, reflects on these forces, and become capable of transforming the world". He further contended that "knowledge is the process through which individuals become aware of objective reality and of their own knowledge of this reality. It is true knowledge of reality that he termed 'conscientization'.

The theory is considered appropriate for this study based on the fact that the whole exercise was meant to conscientize, through the process of reflection, the adult learners to participate in the political discussion so as to become conscious of the social forces prevalent in their political environment. Through the social media platform, the respondents acquire political knowledge and consciousness which, to a greater extent, may influence their political decisions in subsequent political processes in Nigeria.

The O-S-R-O-R model

The O-S-R-O-R model, which provides the basics for communication mediation according to Cho, Shah, McLeod, McLeod, Scholl, & Gotlieb, (2009), took its root from O-S-O-R model developed by Markus and Zajonc in 1985. The model incorporates that pre-existing orientations (01) and personal-psychological factors (02), in conditioning media use (S) and ultimate effects of media use (R). This implies that pre-existing orientations and personal-psychological factors condition how people use the media and the ultimate effects that such media produce.

In another research, Cho et al. (2009), introduced a new element, "Reasoning" (R), at the core of this model. They argued that between the conditioning media use (S) and the personal-psychological factors (02), there is Reasoning (R) which refers to mental elaboration and collective consideration of a topic (Cho et al. 2009). On the basis of this, the **0-S-0-R** model was modified **as 0-S-R-0-R** model. In essence, the **0-S-R-0-R** model suggests that the reasoning process represents a crucial condition for news media use to produce political outcomes.

It also emphasises the fact that political discussion is a reasoning behaviour because exchanging beliefs naturally involves mental elaboration (Cho et al., 2009). The **0-S-R-0-R** model considers that socio-demographic factors, political knowledge, political efficacy, political discussions and media use have both direct and indirect effects on different types of political participation.

This model is considered appropriate for this study because the procedure for using WhatsApp platform involves a reasoning process and behaviour of people derives from their mental cognition of political knowledge which eventually determines their level of participation in political discussions.

Methodology

The case-study research design was adopted for the study. A case study is a useful design when not much is known about an issue, phenomenon or real-life situations and allows for the application of variety of methodologies to investigate a research issue. This design was considered appropriate for the following reasons: (1) Not much is documented on the use of WhatsApp for political discussions; (2) variety of methodologies was applied in the conduct of the study; and (3) the study was on a contemporary real-life situation in Nigeria.

The study's population comprised 45 respondents who had completed basic and post literacy classes organised by the Department of Adult Education, University of Ibadan and have registered and being prepared for Junior WAEC by the Department. However, the sample comprised 28 respondents who met the inclusion criteria specified for participation in the study. Vote buying and indices of good governance were the two focal points of discussion. Political Participation Dividends through WhatsApp Questionnaire (PPDQ) was used to obtain data which were analysed through simple percentages

Since the case-study research design was adopted, the researchers adopted the following procedures in the conduct of the study. They were:

1) Inclusive criteria: The criteria the respondents must meet to participate in the study were:
   i. Respondents must possess Android powered smartphone;
   ii. They must have the knowledge of the existence of WhatsApp platform;
   iii. They must have been using the platform for communication; and
   1v. Expression of interest to participate in the study.

2) Respondents' sensitisation- The second stage involved the sensitisation of the respondents on the essence and purpose of the study. The sensitisation process was done using this format: the researchers post the topic for discussion, the respondents post their opinions, (either single or multiple posts), the researchers <u>summarise</u> respondents' posts and re-post, and respondents indicate the knowledge gained.

3) Rules of Engagement- To ensure strict adherence to the purpose of the study, respondents were intimated with the rules of engagement. Six rules were clearly specified (i) no use of vulgar or derogatory words or language, (ii) respects for other participants views, (iii) simple expressions of views, (iv) no political campaign, (v) no accusation/attack of any political party, and (vi) no posting of any other issue apart from the focal points of discussion.

4) Acknowledgement and response to all posts by the researchers- Participants were assured that no post will be treated as insignificant as long as they were within the focal point of discussion.

Results and Discussion of Findings
Research Question 1: What dividends did the respondents enjoy in **their participation in the study?** Participants were asked to express their views on the dividends they enjoyed in their participation in the study. Their responses are presented in table one.

Table 1: Participants responses on the dividends they enjoyed in their participation in the stud

Variables	Participants with YES Response	Participants with NO Response
Provides platform for political debate and conversation	28 (100%)	
Increases political consciousness and conscientisation	28 (100%)	
Exposure to diverse political views	28 (100%)	
Encourages political activism and sustained discussion	28 (100%)	
Provides platform for political network building	28 (100%)	
Serves as catalyst for political expression	28 (100%)	
Provides avenue for learning about the political views of others	28 (100%)	
Less occurrence of disa ement in views	14(50%)	14(50%)

All the respondents agreed that their participation in the political discussion helped to provide platform for political debate and conversation, increase their political consciousness and conscientisation, expose them to diverse political views, encourage them to engage in intense political activism which was obtained through sustained discussion, provide them the platform to network with others politically, serves as catalyst for political expression, and provide the avenue for learning about the political views of others. However, half of the respondents (14 or 50%) stated that disagreement in views occurred more often during the study.

Research Question 2: What were the low points recorded in the study? Participants were asked to express their views on the low points recorded during the study. Their responses are presented in table two.

Table 2: Participants responses on the low ints recorded in the stud

Variables	Participant with YES Res nse	Participants with NO Res onse
Fear of deviatin from views of others	21(75%	7(25%)
Disobedience to rules of engagement	18 (65%	10 35)
Support for vote buying	16(57%)	12(43)
Delay in response by trying to gauge the posts of others	17(61)	11 39)
Abridged spellings in composition and the difficulty of readin osts	28 {100°/o)	
Tolerance for the views of others	8 29%	20 71%

From this finding, it can be clearly seen that the use of WhatsApp social media platform to elicit political discussion from adult learners has some low points. All the respondents agreed they used abridged spellings in composition of their posts and this constituted some difficulties in reading such posts by the respondents as well as the researchers. Besides, significant proportion of the respondents stated that they complied, most times, in expressing their views from what others had posted from fear of deviating from views of others. This is in line with similar view when majority of the respondents stated that they sometimes delay their responses by trying to gauge the posts of others before they post theirs. Majority also stated that they had little or no tolerance for views of other respondents. One significant low point of the study was the disobedience of the rules of engagement despite the fact that they were clearly stated. Another significant low point was the fact that some respondents expressed support for vote buying. They stated that they will receive money to vote if approached. This was the most surprising low point.

Research Question 3: What lessons were derived from the conduct of the study?
Participants were asked to express their views on the lessons derived from the conduct of the study. Their responses are presented in table three.

Table 3: Participants responses on the lessons derived from the conduct of the stud

Variables	Participants with YES Response	Participants with NO Res onse
Promotes freedom of expression	28 (100%)	
Promotes group Learning	28 (100%)	
Promotes Network building	28 (100%)	
Maintains social interaction and connectedness	28 (100%)	
Encourages interpersonal communication	28 (100%)	
Promotes opinion formation	28 (100%)	
Improves efforts in reading and writing	28 (100%)	
Improves thinking capacity	28 (100%)	

Important lessons were derived from the study. All the respondents agreed that the exercise helped in promoting freedom of expression, group learning, network building with others, building and maintenance of social interaction and connectedness, encouraging interpersonal communication, opinion formation, efforts in reading and writing, and thinking capacit y

Discussion of Findings

The findings of this study have shown that the adult learners specifically enjoyed eight dividends in their participation in the political discussions through the WhatsApp social media platform. The summary of the dividends can be expressed through two indices: provision of a platform for political debate and conversation and a catalyst for political expression. This is in agreement with the submission of Paulo Freire (1970c) when he asserted that: Conscientization is a social reality: to know, which is always a process, implies a dialogical situation. There is not, strictly speaking, 'I think', but 'we think'. It is not 'I think' which constitutes 'we think,' but on the contrary, it is 'we think' that makes it possible for me to think.

The implication of Freire's statement is that the process of conscientization can only be achieved through a dialogical situation which must involve people. Therefore, for people to be conscientized, they must constantly be engaged in the discussion of their affairs through a dialogical process. This is exactly what this study has achieved. By engaging the adult learners in political discussion, they were definitely conscientized. Besides, the finding is also related to views of Gil de Zuniga, Molyneux, & Zheng (2014) when they stated that "political discussion and social interaction on social media can serve as a catalyst for political expression and participation.

In addition, the important lessons derived from the study show that the respondents were able to maintain social connectedness. This agrees with the submission of Cialdini and Trost, (1998) and Wood, (2000) when they contended that "maintenance of social connectedness is the hallmark of engaging people in the discussion of their own affairs through social media platforms". Another lesson was the opportunity to build network among the respondents. They probably wouldn't have had such opportunity if the study had not been conducted.

They unanimously agreed to keep the platform alive where political issues and other issues of national interest can be raised for members' contribution. The platform has been bubbling with discussions of such issues after the completion of the study. This is in agreement with the submission of Donath and Boyd, (2004) that "Network building is considered an implicit function of social networking sites".

Another lesson was that the study helped the respondents moderate their discussion behaviour which probably manifested in their fear of deviating from views of others and sometimes in the delay in response by trying to gauge the posts of others. These were some of the low points recorded in the study.

This finding tally with the views of Huckfeldt, Johnson, & Sprague, (2004a) and Huckfeldt, Mendez, & Osborn, (2004b) when they asserted that: "politically themed discussion groups delay the tendency for homogeneous political conversation".

These low points could even be considered an advantage for the respondents possibly because they were cautious of damaging their public reputation. This is connected with the submission of Donath and Boyd, (2004) when they contended that "when an individual reaches out to their network for social interaction, they may be cautious of damaging their public reputations, and thus moderate their discussion behavior" {sic}. This was corroborated by Dahlgren (2005) in his submission that "Instead of critical debate, participants, using social media platforms, share supporting articles with friends of the same opinions and different spheres that rarely consider the opposing viewpoint".

Furthermore, significant proportion of the respondents expressed their opinion that

in some occasions, they were highly intolerant to the views of others. This is one reason why some of them ignored the rules of engagement especially those of "no use of vulgar or derogatory words or language" and "respects for other participants' views". This finding agrees with the view of Bakshy, Eytan, Messing, & Adamic (2015) and Duggan & Smith (2016) when they contended that "exposure to political disagreement on social media appears to be high". The finding disagrees with the submission of Huckfeldt, Johnson, & Sprague, (2004a); Huckfeldt, Mendez, & Osborn, (2004b) and Mutz, (2002) that "exposure to discussion disagreement, particularly in a social context where one is aware of the views of others in their network, leads to a tolerance for the views of others, and more ambivalent political opinions.

One finding that came as a swprise is that some respondents expressed support for vote buying. In their explanation, they argued that collecting money from politicians is the only gain they get from voting. "After voting them to power, they vamoose and are never seen again until another time for election" was the summary of their view. When asked if they don't think they are mortgaging their future when they collect money before voting, they submitted that "Nigerian politicians don't think about others except their family, therefore, it is better to collect money and forget them or you don't collect money and they forget you". This is a sad submission from some of the respondents. It connotes that there is still the need for more enlightenment and sensitisation for the electorates as regards vote buying and other negativities associated with elections in Nigeria.

Irrespective of this swprise finding, the most important lesson derived from this study is the fact that adult learners can be engaged, just like the youth, in the discussion of personal and national issues through a social media platform.

Recommendations
Based on the outcomes of the study, this paper makes the following recommendations:
1. Researchers must clear specify the procedures for the engagement of the respondents in a study involving social media platform especially as regards the criteria of inclusion, the rules of engagement, and sanctions for the disobedience of such rules. The non-specification of sanctions for disobeying the rules possibility led some respondents to disobey the specified rules of engagement.
2. The Independent National Electoral Commission (INEC), the body responsible for the conduct of elections in Nigeria, needs to urgently and aggressively mount an enlightenment and sensitisation campaigns against vote buying. As shown in this study, some respondents support vote buying by stating that they will collect money to vote if approached.
3. The National Mass Education Commission, together with the State Agencies, must begin campaign on *"War against Vote Buying"* and incorporate it into their advocacy programmes.
4. As part of their facilitation process, every adult learner facilitators must be encouraged to create WhatsApp group platform with their learners to complement whatever facilitation process adopted and encourage them to be more active on the platform. There are many dividends and positive lessons to be **gained** through the creation of such platform as shown in this study.

Conclusion

This study has been able to bridge the gap in literature on the engagement of adult learners in the discussion of political issues using the social media platform. More importantly, it *has* been able to establish that when adult learners participate in political discussions through WhatsApp platform, there are many dividends inherent in such exercise. Similarly, there are many positive lessons derivable from their involvement in political discussions through the WhatsApp platform. This implies that adult learners' facilitators can adopt this platform to complement their teaching methodologies and enhance dialogical process of learning. In this regard, therefore, social media platforms, especially WhatsApp, are a platform for pedagogy of conscientization.

However, there are some unintended variables, as shown in the low points of the study, which must be taken into considerable by any researcher who intends to use this social medium platform to facilitate political and non-political discussions.

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The Effect of Cognitive Behaviour Therapy and Rational Emotive Therapy on the Management of Bulying among Secondary School Students in Eld.ti State

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ABSTRACT

The study examined the effects of Cognitive Behaviour Therapy and Rational Emotive Therapy on the management of bullying among senior secondary school students in Ekiti State. The participants of the study consisted of 90 senior secondary school II students. They were randomized into three equal groups for the treatment of CBTIREBT and Control. Three research questions and three null hypotheses guided the study. Data collected were analyzed with mean, standard deviation, paired t-test and ANCOVA. Results revealed that Cognitive Behaviour Therapy (CBT) and Rational Emotive Behaviour Therapy (REBT) had significant effects in reducing bullying among secondary school students as determined by their pre-test andpost-test mean scores. Therefore, the null hypotheses were rejected. The study concluded that students experiencing bullying should be encouraged to receive psychotherapeutictraining. It is therefore recommended that government and Counseling Association of Nigeria (CASSON) should organize workshops and seminars to sensitize and train counselors on how to use CBTIREBT to help students overcome bullying.

Key words: Academic Performance, Behaviour, Bullying, Stu.dents and Victims

Background to the Study

Students' undesirable behaviours have been one of the major concerns of the educational system. The incidence of gangsterism and cultism in recent times, even at the secondary school is very disturbing, worrisome and posits nightmares in the society. Students' desirable behaviours like attentiveness in class, obedience, regularity and punctuality in class, prompt submission of assignments etc help to promote academic excellence. However, when students engage in disastrous behaviour, particularly, bullying, the objectives of secondary education as a preparatory ground for desirable behaviour for useful living and a contributor to the health and peace of the larger society may be jeopardized. Bullying can simply be referred to as aggression in which a more powerful individual or personality or group intentionally inflicts negative acts repeatedly upon those who are less powerful (Ichechi, 2016). In other words, bullying occurs when someone is exposed repeatedly, and over time, to negative actions on the part of one or more persons. Bullying can also be seen as a behaviour that is particularly a destructive form of aggression affecting physical, social and emotional well-being of both the aggressor and the victim (Alabi and Lami, 2015).

Repeated exposures of students to bulling often undermine their health and well-being (Ichechi, 2016). The victims of bullying are unhappy, anxious, depressed and often times find it difficult to concentrate on their studies and sometimes, they stay away from school because of fear of the bullies and being bullied (Lohmann, 2014). This situation may lead to health problems and poor academic performance. Perpetrators of bullying tend to experience anger, depression, engage in suicidal thinking and if not corrected, are likely to act violently as adults in the home and placeof work. Individuals who enact bullying behaviour may be disliked and rejected by their peer groups; they may suffer low academic achievement and engage in risk-taking behaviours. The engagement of students in bullying may lead to school drop-out, criminal acts, or physical

violence. According to Ichecbi (2016), perpetrators of bulying activities suffer from internalizing difficulties, including anger, depression, anxiety and loneliness.

However, students who experienced bulling or are victims ofbulying may be prone to mental illness and the school climate may be negatively affected. Also students who are not directly involved in bulying may fmd the school environment as hostile and not conducive for learning. Bullying is an anti-social behaviour of the school system and it is contrary to its rules and regulations which have made it a major concern among the educators. From the experience of this researcher, interventions to reduce bullying in schools have made principals and teachers try corporal punishments such as flogging, cutting of grass, uprooting elephant grasses, digging of pits and suspension, depending on the severity of the bullying incidence; however, these interventions have recorded little or no success. Psychotherapeutic means are hardly adopted in Nigerian schools to bring about desirable changes in the behaviour of students. It is interesting to note that bullying as a problem behaviour have been correlated with emotional symptoms and thoughts like anger, anxiety, depression and beliefs which can be controlled by Cognitive Behavior Therapy (CBT) and Rational Emotive Therapy (RET) (Vaida, kallay and Opre, 2015)..

Cognitive Behaviour Therapy according to Daodu, Komolafe, Ogadi and Adedotun (2010) is based on the idea that how we think affect our behaviour and we can monitor and change how we think in order to change our behaviour. The cognitive behaviour therapist therefore teaches clients how to identify distorted cognition through the process of re-evaluation and further, they teach to discriminate between their own thoughts and reality.

CBT helps people to develop alternative means of thinking and behaviour which may reduce their level of bullying. Individuals who enact bullying behaviour have faulty thinking pattern. The aim of this therapy is to help people recognize and change their faulty thinking patterns and bullying behaviour. The most widely acclaimed, trusted and research supported treatment method for the treatment of bulling is known as Cognitive Behavior Therapy (Lohmann, 2014). CBT teaches individuals to understand their thoughts and feelings better in relation to the situation. Furthermore, it teaches how their thoughts, feelings and beliefs influence their actions and behaviour.

Rational Emotive Therapy (RET) is a scientifically oriented frame of reference towards reality, dedicated to the establishment and maintenance of mental health (Dryden, 2015). RET can therefore be applied to sharpen the content and implementation of social learning of children and young people (Vaida, kallay and Opre, 2015). It is an effective therapy used in reducing anxiety, rational thinking and constructive behaviour of school children so as to build their self-esteem and ability to tolerate frustration (Alabi and Lami, 2015; Steins and Haep, 2015). REBT attempts to help students to change their thinking so as to reduce negative symptoms and improve their quality of life, due to the fact that our thinking influences our emotions and behavior (Turner, 2016).

Statement of the problem

The occurrence of bullying among secondary school students have been generally observed and reported by various researchers (Alabi and Lami 2015, Al-Raqqad, Al-Bourini, Al-Talahin and Aranki 2017, Gendron, Williams and Guerra 2011). Victims of bullying in these studies are presented as unhappy, anxious, depressed suffer injuries, have poor self-image and may find it difficult to concentrate on their studies because of such experience. They sometimes stay away from school because of fear of the bullies and these may lead to health challenge or emotional trauma and poor academic performance. They tend to experience depression, engage in suicidal thinking and if not corrected, are likely to act violently. Any person who enacts bullying may be disliked and rejected by their peer groups, because of their bullying behaviour; they may suffer low academic achievement and risk-taking behaviour. Students who engage in bullying are at risk for criminal arrest, school drop-out and physical violence, due to the fact that bullying is an aggressive and violent behaviour. The perpetrators of bullying suffer from internalizing difficulties, including depression, anxiety and

loneliness due to the psychological trauma they suffer. Students who are victims of bullying are prone to mental illness, because they suffer psychological trauma and also school environment is negatively affected. Students who are not directly involved in bullying will find the school environment, not conducive for learning due to aggression and hostility in the school environment.

The preventive mechanisms put in place by the teachers to reduce bullying in schools make such as corporal punishments like flogging, cutting of grass, uprooting elephant grasses, digging of pits and suspension, have met with little success and this have not been successful in curbing bullying among the students. Psychotherapeutic means have been identify to be effective in curbing bullying among the students. The effective therapy used are Cognitive Behavior Therapy (CBT) and Rational Emotive Behaviour Therapy (RET).

Many studies on bullying among secondary students; occasionally identify the consequences, but often focus on cognitive behaviour therapy and rational emotive behaviour therapy separately as preventive or management therapy to reduce bullying effects on their academic performance. Also, there is a dearth of information on the effect of REBT and CBT in the management of bullying among secondary school students in Ekiti State, Nigeria. This necessitates questioning on bullying among secondary school students over the years, the use of cognitive behaviour therapy and rational emotive behaviour therapy as control mechanisms and its effects on the students' behaviour, emotion and academic performance.

Purpose of Study
The purpose of this study was to examine the effect of Cognitive Behaviour Therapy and Rational Emotive Therapy on the management of bullying among senior secondary school students in Ekiti State. In addition it assessed the difference in the effectiveness of the two therapies on the management of bullying among senior secondary school students in Ekiti State. It also evaluated the gender effects in the use of the two therapies on the management of bullying

among senior secondary school students in Ekiti State.

Research Hypotheses
Hypothesis 1: There is no significant effect of CBT/REBT on the reduction of bullying among its perpetrators among senior secondary school students.
Hypothesis 2: There is no significant difference in the effectiveness of CBT/REBT in reducing bullying perpetrators among senior secondary school students.

Methodology
This qualitative research study investigated the effects of cognitive behaviour therapy and rational emotive therapy on the management of bullying among secondary school students. The aspects that were investigated involved determining how academic success is hindered by bullying, the extent of the effectiveness of the therapeutic process on the affected students either socially or academically. The following discussion outlines the research methods employed.

Research Design
The research design used for this study was survey inferential. The survey was carried out in Ekiti State using 4 points Lik:ert scale to generate data for the study. The attendance register for each school was also consulted to collate the students' irregularity attendance.

Population of the Study
All the students in senior secondary class two constitute the population of the study.

Sample and Sampling Technique
A multi-stage sampling technique was used to select the senior secondary school students in class two who were involved in bullying. One senatorial district was randomly selected from the three senatorial districts in Ekiti State. Three (3) Local Government Areas (LGAs) was randomly selected from the selected senatorial district. Two (2) schools were randomly selected from each of the selected Local Government

Areas. Finally, fifteen (15) students were purposively selected from each of the selected schools due to their involvement in school bullying. Thus, a total of 90 students were interviewed for this study.

Instrument for data Analysis

Data was collected in two phases of pre-test and post-test. The pre-test phase involved the collection of base-line data of the experimental groups for judgment. The pre-test data was done during the sensitization of the students of the danger of bulling. The post-test was carried out after the treatment.

Treatment Procedure

The following steps were taken to collect data for the study:

a. Pre-treatment phase
b. Treatment phase
c. Post-treatment phase

Pre-treatment Assessment

Bullying Identification Questionnaire (BIQ) was administered to the randomly selected sample intact classes. Responses were scored on a 4-points Likert type responses. Respondents that ticked 1, 2, 3 and 4 on bullying items participated in the experimental procedure.

Treatment Programme

The treatment programmes are of two types:
i. CBT group
ii. REBT group

The treatment took one session per week at an hour per session in each of the treatment. The whole treatment programme was spread to cover five weeks. The last session was used for the evaluation of the total programme and the post-treatment assessment. Cognitive Behaviour Therapy and Rational-Emotive Behaviour Therapy were used to reduce bullying among the students.

Hypotheses TestingHypothesis 1

There is no significant difference in the efficacy of CBT/REBT on the reduction of bullying among senior secondary school students.

Table 1: ANCOVA table showing pre-test and post-test comparison of CBT and REBT in reducing bullying among the senior secondary school students

Source	df	Sum of squares	Mean square	F.Cal	F. critical
CBT	24	1667.0	833.5	64.3	3.15
REBT	56	894.9	12.9		
Total	80	2561.9			

*Significant, $p < 0.05$

Table 1 revealed that there was a significant difference between the scores of the senior secondary school students who were exposed to Cognitive Behaviour Therapy and Rational Emotive Behaviour Therapies with significant F-calculated value of 64.3, F- critical of 3.15 at alpha level of 0.05. The hypothesis which stated that there was no significant difference in the efficacy of CBT/REBT on the reduction of bullying among senior secondary school students was therefore rejected.

Hypothesis 2

There is no significant difference on the efficacy of CBT/REBT on the reduction of bullying among senior secondary school students.

Table 2: ANCOVA table showing pre-test and post-test comparison of CBT and REBT in reducing bullying among the senior secondary school students

Source	df	Sum of squares	Mean square	F.Cal	F. critical
CBT	24	1667.0	833.5	64.3	3.15
REBT	56	894.9	12.9		
Total	80	2561.9			

*Significant, $p < 0.05$

Table 2 revealed that there was a significant difference between the scores of the senior secondary school students who were exposed to Cognitive Behaviour Therapy and Rational Emotive Behaviour Therapies with significant F-calculated value of 64.3, F- critical of 3.15 at

alpha level of0.05. The hypothesis which stated that there was no significant difference on the efficacy of CBT/REBT on the reduction of bullying among senior secondary school students. Therefore the hypothesis was rejected.

Table 3: **Summary of Scheffe Multiple Comparison Test of the two treatment groups**

Therapy	N	Subset for alpha $= 0.05$
CDT	60	10.2
REBT	60	11.5
Sig.	1.000	0.466

Mean under the same alpha subset or groups were not significantly different.

Table 3 shows the result of the Scheffe Multiple Comparison test. CBT and REBT had the same grouping with the mean scores of 10.2 and 11.5 respectively. However, groups within the same level are not significantly different. This implies that the two therapies were not significantly different in their effectiveness in reducing bullying behaviour among senior secondary school students.

Discussion

The objective of this study was to examine the effect of Cognitive Behaviour Therapy (CBT) and Rational Emotive Therapy (RET) on the management of bullying among some of its perpetrators in senior secondary school in Ekiti State. This was approached by examining the experimental effect of CBT, RET and Control on participants who had experienced bullying in Ekiti State secondary schools.

Findings of the study revealed a significant effect of CBT and RET in reducing bullying behaviour among these secondary school students. The finding agrees with Alabi and Lamidi (2015) who opined that there is significant reduction in the bullying behaviour of participants exposed to REBT treatment. Also, Omoegun (2000) affirmed that REBT was effective in changing attitude towards examination malpractice and behaviours, and catastrophic thinking. It is also in agreement with Warren and Gerler(2014). They stated that REBT was effective in changing irrational beliefs underlying problem

The effects of Cognitive Behaviour Therapy (CBT) and Rational Emotive Therapy

hence examination malpractice behaviour. The finding is also in line with Ntamu (2017) when he asserted that REBT has a significant positive effect on the irrational desire for and preference for the possession of certificates over the internalization of knowledge as the goal of education. It is also aligns with Turner (2016) and Warren and Gerler (2014) who found that REBT was effective in changing irrational beliefs underlying problem behaviours and hence changing problem behaviours.

The study also revealed that the difference in the mean scores of CBT and REBT was not statistically significant. This indicates that CBT was not more efficacious in the reduction of bullying behaviour among senior secondary school students than REBT. The data obtained were analyzed using the Statistical Package for the Social Sciences (SPSS). The mean value was used to see an increment in student achievement in learning before and after the quasi experiment. T-test statistical analysis was used to see the differences between the two therapies. Therefore the hypothesis which stated that there is a significant difference in the effectiveness of CBT/REBT in reducing bullying among senior secondary school students was rejected. The finding is in line with Akhlaghi, *et al.* (2018) when they asserted that Cognitive Behaviour Therapy have significant effects on self-efficacy, adaptive coping, pain-related behaviours and hence changing problem behaviours.

Conclusion

(RET) on the management of bullying among its perpetrators in senior secondary schools in Ekiti

State was investigated in this study. Data revealed the ever increasing cases of bullying among adolescents generally. The negative effect of this is enormous on the academic achievement of the victims. This often affects the total wellbeing of the victim, the family and the society. Findings of the study revealed the positive impact of exposing perpetrators of bullying to CBT and RET and that CBT and RET are equally effective in the management of outcome of bullying among Ekiti adolescents. The experimental nature of the study limited participants to ninety (90) SSII students in Ekiti State secondary schools. The researcher could not evaluate the extent to which the results could have differed if every adolescent in Ekiti State participated in the study. Despite this limitation, the study was successfully carried out and the findings should not be undermined.

Recommendations

In line with the findings of this research work, it is therefore recommended that

- Cognitive Behaviour Therapy and Relative Emotive Behaviour Therapy should be applied in changing bullying behaviour and other maladjusted behaviours among secondary school students.

- CBT/REBT could also be applied to other groups of individuals like the parents, principals, counselors, examination supervisors and even teachers who in one way or the other are involved in bullying behaviours to change their belief system to more positive believes and values that could enhance good human relations among the students.

- School authorities should avoid overcrowding in classrooms and ensure effective classroom management.

- Government, policy makers, proprietors and Counseling Association of Nigeria **(CASSON)** should organize workshops and seminars to sensitize and train counselors and parents on how to use CBT/REBT to help students overcome their bullying behaviours.

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Biserial Association in Kidnapping, Secondary School Enrollment and Students' Academic Performance in ImoState

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Abstract

In this study, the researchers ascertained the Biserial association in kidnapping, secondary school enrollment and *students ' academic performance in Imo State. Two research questions and two hypotheses guided the study. Co"elation research design which involved the explanatory method and simple linear approach was adopted for this study. The population of this study was made up of 296 public secondary schools* and *their host communities in Imo State. A sample of 36 public secondary schools was used as sample. Purposive and simple random sampling techniques were used for the sampling. Three instruments were used for data collection; Kidnapping Occu"ence Inventory (KO/), Secondary School Enrollment Index (SSEI) and Students' Academic Performance Record (SAPR). The face and content validities of the instruments were established. Biserial Co"elation Coefficient statistic (rb) was used to answer the research questions while the hypotheses were tested with t-test of significance of simple linear co"elation statistic at 0.05 level of significance. It was found in this study that kidnapping has a very high negative influence on students ' enrollment and also has moderate negative influence on students' academic performance. This is because, when kidnapping is on the increase, students' enrollment over the years and students' academic performance tend to reduce. Hence there is very high and moderate tendency for kidnapping to affect students' enrollment and academic performance. The researchers recommended that securities should be adequately provided in the local communities so as to curb kidnapping, this can be done through provision of more security personnel in the society.*

Introduction

Educationas an instrument of change seeks to change the environment through the thoughts of human beings and events in the environment. It is a process by which the individual is enabled to develop his knowledge, skills, values and attitudes both for his own benefit and for the benefit of the society. It is the process by which every society attempts to preserve and upgrade the accumulated knowledge, skills and attitudes in its cultural setting and heritage in order to foster continuously the well-being of mankind and guarantee its smvival against the unpredictable at times hostile and destructible elements and forces of man and nature.

Secondary school education occupies strategic position in the national education system. It bridges the gap between the primary and the tertiary levels of education in Nigeria. It is a formalized system of education usually organized for learners between the ages of ten to seventeen years (Federal Republic of Nigeria, FRN, 2013). In the

present Nigeria education system, it is organized into two sections of junior and senior secondary schools for proper development of the students and the nation. The secondary school is an institution or a human industry established for refining human beings in terms of skills, behaviour and all round excellence. The National Policy on Education (FRN, 2013) which states that the broad aims of secondary education in Nigeria are:

- The preparation of students for useful living within the society; and
- The preparation of students for higher education

The aims and objectives make it clear that the ultimate goal of secondary education is to develop the individual's mental capacity and character for behaviour for higher education and useful living within the society since the future of any nation depends quite considerably on the quality of education it provides for its citizens. The realization of these objectives hinges on safety and adequate security in the society. Security means the state of being safe or a state of protection from harm. Security is the basic condition of safety from harm and deprivation, which is applicable to a person, living things, an entity and inanimate objects (Trump, 2010).

Currently, Nigeria is facing numerous challenges which are affecting the socio-economic and educational development of the country. One of such challenges bedeviling the educational development of the country is the issue of kidnapping as well as hostage taking. In Nigeria, kidnapping has turned into a social problem which is affecting virtually every member of the Nigerian society in one way or the other. According to Uzorma and Nwanego (2014), kidnapping is among the terrorizing crimes in Nigeria which is mostly common in the southern part of the country (South-South, South-East and South-West). Practically, the duo entails abduction. Thus, it occurs when a person is abducted and taken

from one place to another against his/her will, or a situation in which a person is confmed to a controlled space without the confmement being approved by a legal authority. Consequently, when the transportation or confinement of the person is done for an unlawful purpose, such as for ransom or for the purpose of committing another crime, the act becomes criminal (Uzorma & Nwanegbo, 2014).

The incident of kidnapping has affected Nigeria's image as a nation abroad. It has also affected Nigeria's attempt to develop a viable tourism industry as visitors are regularly warned by their countries to be wary of coming to Nigeria. This menace has adverse effect on the socio-economic as well as educational development of Nigeria. Furthermore, the social life of people has been affected and there is mistrust among people due to incidence of kidnapping in Nigeria. Also, the image of the country in the global scene has been shattered as a result of this. This has also affected education: enrollment and academic performance.

Many people kidnapped pay a lot of money as ransom. This situation affects both state and household economy. The large sum of money spent as ransom payment could affect the family of the kidnapped person(s) psychologically and financially. Some people usually go as far as borrowing to bail their relatives out from the hands of hoodlums. Inyang and Ubong (2013) pointed out that in many cases; it is often the bread winners of families that are usually targeted. The implication is always felt particularly within the family, whereby members of such families will have to feed themselves and adjust to their normal daily activities, until they secure the release of the victim. If the victim is a businessman or woman the business will suffer, if he is a civil servant or an artisan, his place of work will be affected adversely. In both cases there is going to be some setback.

This also adversely affects the education of the family.

Enrollment in education is the ability of the people to have equal opportunity in education, regardless of their social class, gender, ethnicity background or physical and mental disability (Dubey 2010). According to Kozol (2005) enrollment in education is the process of granting people opportunity to school irrespective of social status, gender physical and ethnic background It is also referred to the ways in which government ensure that students have equal and equitable opportunities to take full advantage of their education. Though, this right has been interrupted by some deviant act and or sub-cultural behavior among some citizen of the area. This enrollment is denied by kidnapping activities within the locality where the schools are located which could as well affect the academic performance.

Academic performance is the measure of students' learning acquisition of certain skills at the end of teaching and learning activities. Students' academic performance refers to students' performance or attainment in a subject. It also means cognitive score (Nwana, 2007). According to Nwagbo (2001), achievement in teaching/learning process has to do with attainment of a set of objectives of instruction. If a learner accomplishes a task (for example, any subject problem) successfully and attains the specified goal for a particular learning experience, he is said to have achieved. Academic performance is the learning outcome - the determination of the extent to which a student has achieved his/her educational goal, and which can be measured by any form of assessment technique.

Biserial association/correlation (lb) entails correlation method which involves the use of Biserial correlation statistics to establish the linear relationship between an artificially dichotomized variable and a continuous variable. Here, the interest is to associate the dichotomized variable with a continuous variable as well as exploring their likelihood of relationship in a straight line. Supporting the above, Biserial correlation (lb) is a correlational index that estimates the strength of a relationship between an artificially dichotomous variable (X) and a true continuous variable (Y). Both variables are assumed to be normally distributed in their underlying populations (http://methods.sagepub.com/reference/the-sage-encyclopedia-of-social-science-research-methods/n70.xml). The Biserial correlation is an estimate of the original product-moment correlation constructed from the Point-Biserial correlation. It measures the relationship between quantitative variables in the form of continuous scores and qualitative variables in the form of binary scores. In this study, incidence of kidnapping is measured as a qualitative variable in binary form of 1=occurred and O=have not occurred, while secondary school enrollment and students' academic performance are measured as quantitative variables in the form of continuous scores.

Empirically, Odumbo, Shittu, Akinyemi and Momoh (2017) reported that kidnapping has scared away potential education investors, tourists, and other educational stakeholders and developers. Also, the parents and students of secondary schools are living with perpetual fear of kidnappers; hence, many parents have withdrawn their wards from schooling due to insecurity of life and property parading in government schools, which affects school enrollment. Also, Inyang and Abraham (2013) revealed that as a result of rampant kidnapping of students, broad-day and night travel has become a high risk venture and many school administrators, parents, teachers and students havebeen forced out of their schools or houses by kidnapper and inflict them with psychosomatic disorder because nobody know who will be next victims and this affects the academic performance of the students as well.

Odumbo, Shittu, Akinyemi and Momoh (2017) also revealed that based on kidnapping problems, some parents and their wards have relocated from one community or state to another due to fear of being kidnapped and many schools have been closed down for a period of time.

The post independent state of Nigeria has encountered several episodes of socio-economic and political crises and heighted insecurity in her domain. The security situation in the country has worsened over the years particularly as militancy, intercommunity, interethnic wars, ethnic religious violence, Fulani herdsmen and host of other clashes among others increased. All these have compounded Nigeria's deplorable condition in the areas of widespread poverty, health and general poor level of education and other social services (Nwankwo, 2016).

The escalation of this situation in the wider society has its implication in the nation's institutions of learning (secondary school inclusive). Stakeholders in education have shown concern about the insecurity of lives and properties in schools and their hosting communities, as students, teachers, and community leaders and prominent men are kidnapped. Some ask, is it better to go to school and be kidnapped or stay at home safe? Even the home is not safe. The researchers ask: what is the Biserial association in kidnapping, secondary school enrollment and students' academic performance in Imo State?

The main purpose of this study was to investigate the Biserial association in kidnapping, secondary school enrollment and students' academic performance in Imo State. Specifically, the study ascertained the:-
1) Biserial association between kidnapping and secondary school enrollment in Imo State, and
2) Biserial association between kidnapping and secondary school students' academic performance in Imo State.

The following research questions were posed to guide the study:
1) What is Biserial association between kidnapping and secondary school enrollment in Imo State?
2) What is the Biserial association between kidnapping and secondary school students' academic performance in Imo State?

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

Ho1: The Biserial association between kidnapping and secondary school enrollment in Imo State is not significant.

Ho2: The Biserial association between kidnapping and secondary school students' academic performance in Imo State is not significant.

Method
Correlation research design which involved the explanatory method and simple linear approach was adopted for this study. The population of this study was made up of 296 public secondary schools and their host communities in Imo State. A sample of 36 public secondary schools was used as sample. Purposive and simple random sampling techniques were used for the sampling. In the sampling, the researcher purposively chose four LGAs associated with cases of kidnapping and militant activities within the oil producing **LGAs** of Imo State, and hence, random sampling was done in choosing the schools therein. Three instruments were used for data collection; Kidnapping Occurrence Inventory (KOQ, Secondary School Enrollment Index (SSEQ and Students' Academic Performance Record **(SAPR).** In the correlation, the KOi was coded as 1=occurred and 0=have not occurred. This occurrence was measured as it took place in a particular hosting community. The face and content validities of the instruments were established. Biserial Correlation Coefficient

statistic (n,) was used to answer the research questions while the hypotheses were tested with t-test of significance of simple linear correlation statistic at 0.05 level of significance.

Results
Biserial association between kidnapping and secondary school enrolment in Imo State

Table 1:
Variables (V:X&Y), Sample Size (n), Summation {D, Biserial Correlation (Ib), Coefficient of Determination (Ib^2), Magnitude of Relationship, Direction, Alpha Level (a), Degree of Freedom (df) and t-test of Significance of Correlation between two Variables

V	n	I	n,	n,2	Magnitude of Relationshi2		Direction
X	36	18			Very		
			-0.91	0.83	High		Negative
y	36	1989			Relationship		
n		**r**	**a**	**df**	**tca1**	**itab**	**Decision**
36		-0.91	0.05	34	12.741	1.96	Ho Rejected
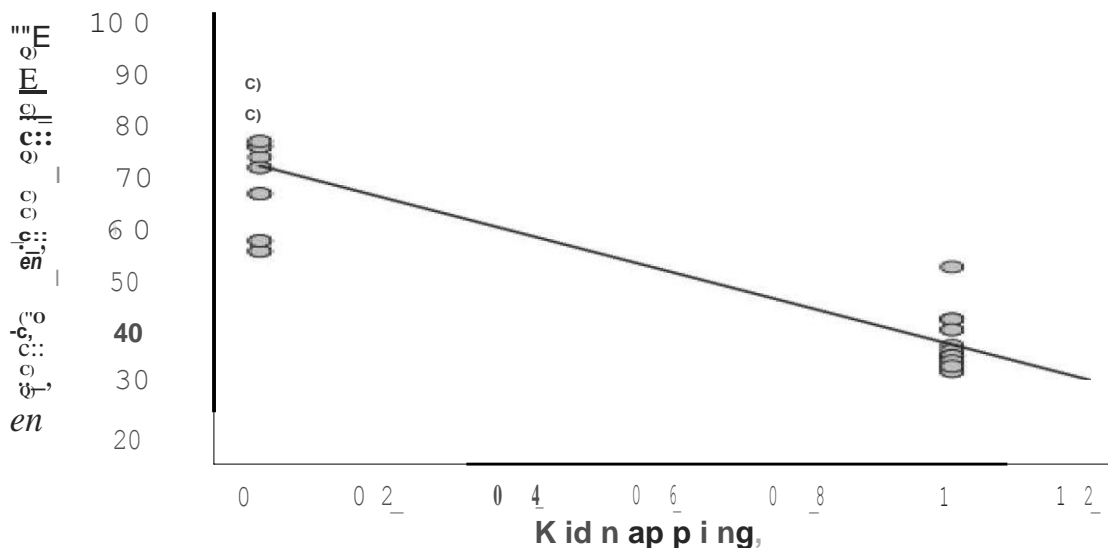
The result in table 1 revealed that the Biserial association between kidnapping and secondary school enrollment in Imo State is -0.91. This index shows that there is a veryhigh negative relationship between kidnapping and secondary school enrollment. The percentage coefficient of determination reveals that 83% of the negative variation in secondary school enrollment could be attributed, accounted for or explained by kidnapping cases in the school host communities. The direction of the relationship was clearly presented in the scatter plot, which shows, the negative direction of the linear relationship between kidnapping and secondary school enrollment. Furthermore, the degree of freedom is 34; the t-calculated value of 12.741 was seen to be greater than the t-tabulated value of 1.96. This led to the rejection of the null hypothesis, thus concluding that the association between kidnapping and secondary school enrollment is significant.

Table 2:
Biserial association between kidnapping and secondary school students' academic performance in Imo State.
Variables (V:X&Y), Sample Size (n), Summation Q:), Biserial Correlation (n,), Coefficient of Determination (n,2), Magnitude of Relationship, Direction, Alpha Level (a), Degree of Freedom (elf) and t-test of Significance of Correlation between two Variables

V	n	r	11,	n,2	Magnitude of Relationship	Direction
X	36	r8			Moderate	
			-0.SS	0.30		Negative
y	36	27.89			Relationship	

n	r	a	df	tca1	ttab	Decision
36	-0.55	0.05	34	3.823	1.96	Ho Reject
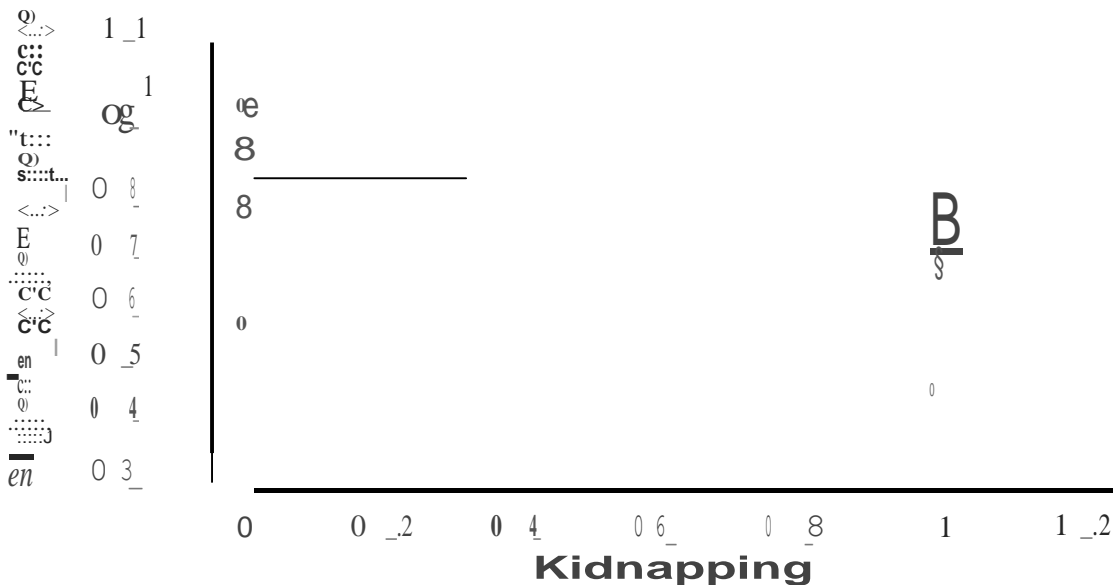
The result in table 2 revealed that the Biserial association between kidnapping and secondary school students' academic performance in Imo State is -0.55. This index shows that there is a moderate negative relationship between kidnapping and secondary school students' academic performance. The percentage coefficient of determination reveals that 30% of the negative variation in secondary school students' academic performance could be attributed, accounted for or explained by kidnapping cases in the school host communities.

The direction of the relationship was clearly presented in the scatter plot, which shows, the negative direction of the linear relationship between kidnapping and secondary school students' academic performance. Furthermore, the degree of freedom is 34; the t-calculated value of 3.823 was seen to be greater than the t-tabulated value of 1.96. This led to the acceptance of the null hypothesis, thus concluding that the association between kidnapping and secondary school students' academic performance is significant.

Discussion of Findings

It was revealed in this study that there is a very high negative relationship between kidnapping and secondary school enrollment. This result was confirmed by the test of hypothesis which indicated that the association between kidnapping and secondary school enrollment is significant. This result is thus a clear indication that there is an inverse relationship between kidnapping and secondary school enrollment. That is to say that kidnapping negatively affects secondary school enrollment in Imo State, because, as cases of kidnapping increases, students• enrollment decreases. This finding is in line with Odumbo, Shittu, Akinyemi and Momoh (2017) result which reported that kidnapping has scared away potential education investors, tourists, and other educational stakeholders and developers. Also, the parents and students of secondary schools are living with perpetual fear of kidnappers; hence, many parents have withdrawn their wards from schooling due to insecurity of life and property parading in government schools, which affects school enrollment. Similarly, Odum.ho, Shittu, Akinyemi and Momoh (2017) also revealed that based on kidnapping problems, some parents and their student wards have relocated from one community or state to another due to fear of being kidnapped and many schools have been closed down for a period of time. The similarities recorded among the fmdings could be attributed to the negative implication of kidnapping on the development of the society irrespective of the sector.

It was also found that there is a moderate negative relationship between kidnapping and secondary school students' academic performance. The inference shows that the association between kidnapping and secondary school students' academic performance is significant. This is also a clear indication that kidnapping negatively affects secondary school students' academic performance in Imo State. This result is true because cases of kidnapping have negative psychological effect on the victim as well as the relation which will invariably affect the cognitive performance of students in examination. In line with this fmding, Inyang and Abraham (2013) revealed that as a result of rampant kidnapping of students, broad-day and night travel has become a high risk venture and many school administrators, parents, teachers and student have been forced out of their schools or houses by kidnapper and inflict them with psychosomatic disorder because nobody know who will be next victims. And this affects the academic performance of the students as well.

Conclusion

Based on the result of this study, the researchers conclude that kidnapping has a very high negative influence on students' enrollment and also has moderate negative influence on students' academic performance. This is because, when kidnapping is on the increase, students• enrollment over the years and students' academic performance tend to reduce. Hence there is very high and moderate tendency for kidnapping to affect students' enrollment and academic performance.

Recommendations

Based on the findings of this study, the researchers recommend that;

1. Securities should be adequately provided in the local communities so as to curb kidnapping. This can be done through provision of more security personnel in the society.
2. Those factors such as poverty, unemployment, thugery that give rise to kidnapping among the youths and other persons in the society should be discouraged and curbed.

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The Perception Of Students In General Studies Computer Based Tests In Universities In Southwest Nigeria

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Abstract

The study investigated the perception of students and lecturers in General studies Computer Based Test (CBT). Stratified, simple and purposive sampling techniques were used in selecting eighty eight lecturers and one thousand, eight hundred undergraduate students from both public and private Universities in South West, Nigeria; who assessed and sat for a CBT in General Studies. Data were collected with the use of two questionnaires whose reliability coefficients by test-retest were 0.73 and 0.76 respectively. Data gathered were analyzed using descriptive statistics (Frequency counts and Percentages). Results showed that Computer Based Test (CBT) improved the competences and performance of students in General Studies and lecturers assessment skills. The study recommends that public and private universities especially in Nigeria, should adopt and improve on the use of Computer Based Testing/or examination purposes.

Keywords: Computer Based Tests (CBT); General Studies; Perception; Students.

Introduction

Computer-based testing (CBT) is gaining popularity over the traditional paper-and-pencil test (PPT) due to many advantages it provides. In the sense that CBT increased student motivation, improved accuracy in data collection, improved match for special populations, and fast reporting of results (Kapoor & Welch, 2011; Poggio & McJunkin, 2012). Accessibility features can be conveniently embedded into CBTs, allowing for supports and accommodations such as glossaries, color contrast, text to-speech, spelling check, highlighting, and closed- captioning (Bennett, 2015). The quick reporting of results is particularly useful to educators as they are able to access and use these results to make timely changes in instruction if necessary (Bennett, 2003; Dean & Martineau, 2012; Peak, 2005; Poggio & McJunkin, 2012).

Kolawole (2001) sated that test is an instrument used to elicit sample of behaviour which could be cognitive, affective or psychomotor. However, this research, evaluated the cognitive aspect of the item being used in General studies. Test is an instrument used to make judgments and assessment of teaching and learning. Tests and testing practices are often based on provision of good quality tests to test takers in a cost-effective manner, with the help of test sponsor, test developer, and test administrator (Barbara, 2002).

However, Computer Based Test (CBT) is an effective solution for mass education evaluation. Though, a variety of e-assessment approaches and systems have been developed in

recent times, yet lack of flexible timing functionality to automatically log-off candidates upon expiration of allotted time, result integrity comprise, stand-alone deployment, lack of flexibility, robustness and scalability as well as human error are major limitations of the existing platforms. The introduction of general studies computer based tests in higher education is developing rather slowly due to institutional barriers, (the need for extra facilities and ensuring test security). In the universities, it was observed that implementation of computer based tests for general studies requires a secure testing environment especially an environment that prevents students from seeking answers by scanning computer hard drives, instant messaging or e-mailing friends or browsing the internet. Lack of standardized /unified CBT development model also undermines the success of the general studies computer based tests.

Umunadi (2011) posited that the philosophy behind the General Studies is to expose the students to knowledge outside their chosen disciplines as fresh student in the university. The General Studies courses are meant to expose students to greater awareness about other disciplines of study with a view to making them perform better in their chosen field of study and become better members of the society in the long run. General Studies was designed to co-ordinate multi-disciplinary studies that could broaden knowledge and widen the academic horizons of students of the University in all Departments and Faculties. General Studies was established to achieve some objectives like assisting the students to develop and appreciate and expand the awareness of their social and cultural values. Davey (2011) concluded that a wide variety of options is now available for conducting test out of which technology is one of the most important. Zhang, Powers, Wright and Morgan (2003) asserted that technology is useful for constructing responses on screen, allows marking quality to be monitored in real time and potentially.

In recent time, technology offers many new opportunities for innovation in educational assessment through potentially and powerful scoring, reporting and real-time feedback mechanisms. Universities have implemented numerous attempts and efforts to integrate information and communication technologies (ICT) into administration and instruction process by the creation of the management information system (MIS) unit (Mejabi & Raji, 2010). It is on this note that universities integrate part of information and technology for the purpose of testing the students. Therefore, computer and internet technologies have been useful for many purposes such as tracking and recording students[5] information, administration of personnel and accounting, and delivering course contents, announcements and assignments (Bennett, 2009). More so, computer and related technologies provide powerful tools to meet the new challenges of designing and implementing assessments methods that go beyond the conventional practices and facilitate to record a broader repertoire of cognitive skills and knowledge (Olumorin, Fakomogbon, Fasasi, Olawale & Olafare, 2013). Gauss (2010) also reiterates the fact that without modem technology there is no society. Andrew, Pullen and Harper (2009) concluded that some of the advantages of CBT to institutions and learners are time analysis of responses to the question level to better discriminate between Students' Perceptions of Computer-Based Test in Nigerian Universities. Also human error can never be completely accounted for when using computers for test. The use of computer-based tests (CBTs) has increased significantly over the last few years. The most common type of CBT is the linear CBT which is a fixed-length computerized assessment that presents the same number of items to each examinee in a specified order and the score usually depends on the number of items answered correctly. Evidently, linear CBT imitates a Paper based test that is presented in a digital format and pays little or no attention to the ability of each individual examinee.

Also computerized adaptive testing (CAT) is a special type of computer based test. Each examinee takes a unique test that is tailored to

his/her ability level 01 an der Linden & Gias, 2000). The face of examinations in Nigeria is gradually getting a new look due to the introduction of the computer-based test (CBT) system. CBT system has been used by a number of Nigerian universities to conduct their post UTME (Unified Tertiary Matriculation Examination) for prospective students. However, only few researchers had determined User's perceptions of CBT but did not create valuable insights into the students[9] perceptions of CBT. This study therefore created valuable insights into CBT in relation to usefulness, ease of use and credibility.

Research Questions

The following research questions were answered in the study.
1. Does CBT improve the perception of students on performance in General Studies?
2. Does CBT improve the perception of lecturers in examining General Studies students[7] performance?
3. What is the perception of students about themselves on the use of Computer Based Tests for General Studies examination?

Methods

The researchers employed a descriptive research design of the survey type. The population for this study comprised all hundred level undergraduate students (2016/2017 academic session), who sat forthe General Studies test by CBT in bothprivate and public universities in South West, Nigeria. A sample of one thousand, eight hundred students and eighty eight lecturers were selected for the study. First, the stratified sampling technique was used to select the South West geo-political zone; simple random sampling was used to select private/public universities in the zone and students who were in their hundred levels and pmposive sampling was used to select lecturers who were teaching GST in the selected universities. Data were collected with the use of two questionnaires whose reliability coefficients by test-retest were 0.73 and 0.76 respectively. Data gathered were analyzed using descriptive statistics (Frequency counts and Percentages).

Results

RQ 1: Does CBT improve the perception of students on performance in General Studies?

Table 1: **Perception of students' performance in General Studies** in **Computer Based Tests**

ITEMS	YES	NO	necision
	Freq (%)	Freq (%)	
CBT improves my performance in General Studies Courses	1394 (86.0)	27 (14.0)	Improved
General Studies continuous assessment enhances my performance	393 (85.9)	228 (14.1)	Improved
My grade is improving when CBT has been adopted for General Studies examination	1374 **(84.8)**	247 (15.2)	Improved
I obtained high scores in GST when using CBT	1310 (80.8)	11 (19.1)	Improved

Improved: Score above SO¾

Table 1 shows that 1394(86.0%) of the students declare that CBT improves their performance in GSTs, while 227(14.0%) had a contrary view. 1374(84.8%) students my grade is improving when CBT has been adopted for General Studies

examination while 247(15.2%) had a different view. 1310(80.8%) students obtained high scores in OST when using CBT while 311(19.1%) did not.

RQ 2: Does CBT improve the perception of lecturers in examining General Studies students performance?

Table 2: The perception of lecturers in examining GST

ITEMS	YES Freq (%)	NO Freq(%)	Decision
I released my results at the appropriate schedule.	86 (97.7)	2 (2.3)	Improved
CBT allows course evaluation by me to be undertaken more easily.	62 (70.5)	26 (29.5)	Improved
CBT allows testing of superficial level of understanding.	63 (71-6)	25 (28.4)	Improved
CBT test in GST is more creditable and devoid of examination mal ractices.	65 (73.9)	23 (26.1)	Improved
CBT is time saving and allows regular assessment of testees.	61 69.3	27 (30.7)	Improved

* Improved = Scores above 50%, Not improved = Scores below 50%

Table 2 shows that 86(97.7%) of the lecturers released their results at the appropriate schedule, while 2(2.3%) of the lecturers did otherwise. 62(70.5%) lecturers said that CBT allowed course evaluation by lecturers to be undertaken more easily while 26(29.5%) lecturers thought otherwise. 63(71.6%) lecturers said that CBT allowed testing of superficial level of understanding while 9(10.2%) lecturers said that CBT did not allow testing of superficial level of understanding.

Also, 65(73.9%) lecturers noted that CBT test in GST was more creditable and it was devoid of examination malpractice while 23(26.1%) held **a** different view. 61(69.3%) agreed that CBT is time saving and allows regular assessment of testees while 27(30.7%) disagreed with the assertion.

The students with perception respond of 50% and above have positive perception on performance in general studies while students with perception respond less than 50% were considered to have negative perception.

The lecturers with perception rating of 50% and above have positive perception in examining GST students[9] performance while lecturers with less than 50% had negative perception. Therefore all the students and the lecturers who participated in the study have positive perception computer based tests and the lecturers have positive perception in examining General Studies students' performance.

Table 3. Computer Based Test on students percep·tions

ITEMS	VVC:! Freq (%)	n Freq %)	Decision
l can handle computer efficiently	1396 (86.1)	225 (13.9)	Positive Perception
lt is very easy to operate	1441 (**88.9**)	180 (11-1)	Positive Perception
[t enables me to delete the wrong answer easily	1437 (**88.6**)	184 (11-4)	Positive perception
[t enables me to think deeply before clicking on	1424 (87.8)	197 (12.2)	Positive Perception
I tenables me to judge myself after General	1434 (**88.5**)	187 (11-5)	Positive Perception
lt enables me to answer the easiest questions before tackling difficult auestions	1441 (**88.9**)	180 (11-1)	Positive Perception
CBT does not allow cheating in the examination hall	1446 (89.2)	175 (10.8)	Positive Perception

 *Positive Perception = Scores above SO%, Negative Perception = Scores below SO%

Table 3 shows that 1396 (86.1%) students said that they could handle computer efficiently while 180 (11.1%) disagreed. 1437 (88.6%) said that CBT enabled them to delete the wrong answer easily while 184 (11.4%) held a contrary **view.** 1424 (87.8%) said that CBT enabled them to think deeply before clicking on any options, 197 (12.2%) thought otherwise 1434 (88.5%) opined that CBT enabled them to judge themselves after General Studies examination while 187 (11.5%) thought differently. 1441(88.9%) of the respondents said that CBT enabled them to answer the easiest questions before tackling difficult questions while 180 (11.1%) said it did not enable them to tackle the easiest questions before difficult questions. 1446 (89.2%)of the sample revealed that CBT did not allow cheating in the examination hall while 175 (10.8%) revealed that CBT allowed cheating in the examination hall.

Students[5] with perception rating of 50% and above were considered to have positive perception towards the use of Computer Based Tests for General Studies examination while students with perception respond less than 50% were considered to have negative perception. Therefore, all the students who participated in the study have positive perception about themselves on the use of Computer Based Tests for General Studies examination.

Discussion
The findings of the study showed that Computer Based Tests improves the performance of students in General Studies and enhances lecturers' assessment skills. Students got good marks in General Studies by Computer Based Testing and lecturers are able to release results of students at the appropriate time. The finding is in conformity with the finding ofTella & Bashorun (2012) showed that CBT established strong perception that CBT increase student performance in examination. The findings revealed that students have positive perceptions about the use of computer based tests for General Studies examination. This could be as a result of the fact that majority of the students nowadays

225 (13.9%) could not. 1441(88.9%) students said that CBT was very easy to operate while are computer literate. The result is in support of the finding of Ayo, Akinyemi, Adebiyi & Ekong (2007) which showed that majority of the applicants for admission in Nigerian universities were computer literate and few of the applicants had not been involved in any form of electronic examination before, and found it difficult.

Recommendation
1. Both the Public and Private universities are advised to improve the use of CBT for General Studies Examination once there is a positive attitude of students to the use of CBT for GST. CBT must be continually used in both public and private universities.
2. Both public and private universities who are not using Computer Based tests for General Studies are advised to introduce Computer Based Tests in their universities since Computer Based Tests improve the performance of students in General Studies.

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Knowledge of Basic Mathematics and Statistics: Imperative for Evaluation of Women Empowerment and Sustainable Development Programmes

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Abstract

This study investigated developments of the girl-child mathematics and statistics skills as an imperative for evaluation of women empowerment and sustainable development programmes in South-Eastern Nigeria. Women's empowerment *and sustainable development programmes are issues of great concerns in the 2JS' century as functional literacy* programmes *for the* female *adults will help increase their contributions to the Millennium Development Goals (MDGs) and the Sustainable Development Goals (SDGs). The study used the survey research design and randomly selected a* sample size of 480 respondents. The instrument for data collection was a questionnaire developed by the researchers and validated by experts in research instrument development which had a reliability index of 0.78 determined using Split-half method and calculated using the Pearson Product Moment Correlation formula. Results of data analysis using descriptive statistics revealed that *mathematics and statistics teaching at the age of 3- 11 years should be revamped using innovative teaching practices and research-based curricula for sustainable women mathematics and statistics knowledge empowerment.*

Keywords: Early, teaching, basic, mathematics, statistics, girl-child, evaluation, women empowerment, sustainable, development.

Introduction

Women's empowerment and sustainable development of the girl child at all levels *is one of the 17* Sustainable Development *Goals (SDGs) proclaimed by the United Nations (UN)* geared towards empowering women *and girls across all its* programmes *and advocacies. The word women empowerment refers* to all measures designed to increase the degree of autonomy and self-determination of women in communities in order to enable them to represent their interests in a responsible and self-determined way.

It further entails all policies *as* well *as* strategies put in place so that women or girls can act on their own authority, enjoy their right to own, control and manage resources, assets and income *as* well as risk situations available in the land so as to improve their economic status and general well-being. Thus, an empowered woman is someone who takes control of her life, knows her strength or capabilities, dreams big, sees risk and is not afraid to embrace them. But, the extent of attainment of programmes objectives set up in line with **SDGs** on the empowerment of women and girls needs constant evaluation.

Put differently, sustainable growth and development in female gender related issues are achievable when *women empowerment and sustainable development programmes* are constantly and effectively evaluated so *as* to determine the level of implementation, strength, weaknesses and areas of possible review for the overall growth and impact of such programmes. That is, completed as well as on going activities should be critically looked into so as to ascertain the level of effectiveness as well *as*

accountability in material and human resources invested.

Evaluation is the systematic process through which information regarding a person, a process or a programme is collected, analyzed, and interpreted in line with well stated objectives or purposes so as to determine the extent of attainment. In the views of Gronlund (1985) and Wentling (1980) cited in Joshua (2005), evaluation is the systematic process of judging the worth, desirability, effectiveness or adequacy of something according to definite criteria and purpose.

It includes obtaining information (quantitative and qualitative) for use in judging the worth of a programme, project, procedure, subject, curriculum or objectives or potential utility of alternative approaches designed to attain specified objectives. Thus, evaluation in inevitable ifwe are to attain to a large extent the SDGs on women empowerment. That is to say, there is need to constantly evaluate programme and policies targeted at empowering the women and girls in the society.

Unfortunately, some degree of rigorous data analysis is needed to effectively evaluate the extent to which predetermine programmes objectives are being met as well as find out factors that may facilitates or hinder their level of attainment. Such rigorous data analysis by stakeholders and beneficiaries will help to establish cause and effect relationships on the extent to which a policy or set of policies produces the proposed outcomes. Thus, the need for literacy in basic mathematics and statistics.

Mathematics and statistics are two complementary discipline needed for the development of any sector or nation but the teaching and learning of these disciplines have over the years been laden with numerous problems (Tali, Mbwas & Abe, 2012; Odili, 2006; &Kolawole, & Oluwatayo 2004 Eluwa&Eba 2015; Dougherty, Flores, Louis & Sophia, 2010; Chance, delmas& Garfield, 2004; delmas, & Liu 2005; Derry, Levin, Osama, Jonas & Peterson, 2000; Gal, & Ginsburg, 1994). More so, the issue of sustainable growth and development has also remained elusive for many African countries due to several challenges such as insufficient investment in the right sectors, corruption, as well as conflicts and insecurity (Iyanda, 2017).

Mathematics which has contributed significantly and immeasurably to human development in the world is much more than just the study of numbers. Mathematical ideas have been used in the building of houses, bridges and general architecture. It is a veritable knowledge skill for most achievements in the physical sciences, technology, business, financial services and many areas of ICT. It is also of growing *importance* in biology, medicine and many of the social sciences. Thus, countries who have succeeded in the field of science and technology always pinpoint mathematics as being responsible (Iyanda, 2017).

Statistics in the same vain is an indispensable tool for national development, growth and planning. A government without efficient and effective statistics information generation, distillation and dissemination base will be severely handicapped in doing proper planning, monitoring and evaluation of developmental programmes as well as execution of projects (Shangodoyin, & Lasisi, 2011). Thus, mathematics and statistics skills should be taught early to children in the educational process.

Mathematics and statistics skills when taught in early and middle childhood education are designed to provide the foundations students need to succeed in secondary school and beyond. Bruner (1915) an American psychologist who made significant contributions to human cognitive psychology and cognitive learning theory opined that any concept should be taught early to a child because of high cognitive activities occurring at this stage of development. In other words, in early and middle childhood (3 - 8 years, and 9 - 11 years), children learn a lot by doing and experiencing the consequences of their actions. Thus, since the goal of education is intellectual development and learning is an active process in which learners construct new ideas or concepts based upon their current as well as past knowledge; it should be done early.

Therefore, mathematics and statistics teachers should introduce early in the curriculum simple basic concepts and focus such

lessons in early childhood (3 - 8 years, and 9 - 11 years) around real life skills that will later build up to advanced mathematics and statistics knowledge in secondary school and tertiary levels oflearning (Concordia University, 2012). As such, the pre-primary and primary school curriculum should emphasize to the girl child the relevance of mathematics and statistics skills early in their developmental stages so as to build a positive foundation for the acquisition of needed competences in these disciplines.

More so, by introducing basic mathematics and statistics concepts early in childhood education; the right attitude, cognitive abilities, and the right emotions could be formed since these variables are major determinant in quality and quantity oflearning attainable in the learning process (Dowker, Bennett, & Smith, 2012).In order words, the young learners' future understanding of mathematics and statistics courses requires an early foundation based on a high-quality, challenging, and accessible mathematics and statistics education (Dougherty, Flores, Louis, & Sophian, 2010).

Teachers who provide early childhood education in mathematics and statistics set the building blocks for future achievements as well as prepare the children to delve deeper in these disciplines. The mathematics and statistics curriculum that will empower the girl child with adequate skills for future evaluation of women empowerment programmes geared towards sustainable development must include experiences that incorporate mathematics and statistics content in areas such as numbers and operations, geometry, algebraic processes, statistics reasoning as well as measurement (Eluwa & Eba 2015; Dougherty, Flores, Louis &Sophia, 2010; Edward, 2010; Chance, delmas & Garfield, 2004; Charleston, 2006; Cobb, 1992; delmas, & Liu 2005; Derry, Levin, Osama, Jonas &Peterson, 2000;Gal, & Ginsburg, 1994; Groth, & Bergner, 2006; Hawkins, Joliffe, &Glickman, 1992)

The development process of any nation needs the effective participation of women in all sectors given that women constitute more than 50% of the world population. And women's empowerment is the process of improving the human capital of women for effective

participation in all aspects of development of a community or nation which comprise the building of their capacity in order to prepare them for political and socio-economic advancement. However, early training and access to comprehensive education is the driver of the empowerment of women in any society (Olivia & Frimpong 2005). The empowerment of women is inevitable if we are to achieve the sustainable development goals.

Sustainable development which refers to the rate of development that can be maintained without creating a lacuna for future generations is an issue of great concern in the 21st century. According to the United Nations (1987) Bruntland declaration, it is the development that meets the needs of the present without compromising the ability of future generations to meet their own needs (Palmer, 2013). This development according to Iyanda, (2017) has been broken into social sustainability, sustainable economic development, cultural development, and environmentally sustainable development.

Researches supports the implementation of curricular resources and program that support the early girl child education for sustainable development(Tali, Mbwas & Abe, 2012; Shangodoyin, & Lasisi, 2011; Dougherty, Flores, Louis, & Sophian, 2010).The National Association for the Education of Young Children (NAEYC) and the National Association of Early Childhood Specialists in State Departments of Education (NAECS/SDE) recommend the implementation of curriculum that is thoughtfully planned, challenging, engaging, developmentally appropriate, culturally and linguistically responsive, comprehensive, and likely to promote positive outcomes for all young children (2003).

The need to provide the girl child with early access to mathematics and statistics instruction for future *womens empowerment* and their subsequent contributions to the realization of the MDGs and SDGs is in line with the above recommendation. Thus, research communities have the task as well as the responsibility to identify problems, search for solutions by collecting useful data, analyze such data and give value judgments to results of such

analysis of data for greater understanding of issues around the girl child for the benefits of all. Against this background, this study identified and investigated on topics in the mathematics and statistics curriculum that may hinder the girl child from participating in evaluation activities of women empowerment and sustainable development programmes when not taught early in South-Eastern Nigeria.

Consequently, the specific objectives of the study were:

1. identify the areas in the mathematics and statistics content that should be taught early to empower the girl child for meaningful and sustainable contribution to women empowerment programmes.
2. Determine if male and female respondents differ in their mean rating of the areas in the mathematics and statistics content of work that should be taught early to empower the girl child for meaningful and sustainable contribution to women empowerment programmes.
3. find out whether gender has any significant influence on the identified areas in the mathematics and statistics content of work that should be taught early to empower the girl child for meaningful and sustainable contribution to women empowerment programmes.

Research Questions

1. What are the topics in the mathematics and statistics content that should be taught early to empower the girl child for meaningful and sustainable contribution to women empowerment programmes?
2. What is the mean difference in the rating of maleand female respondents on the topics in the mathematics and statistics content of work that should be taught early to empower the girl child for meaningful and sustainable contribution to women empowerment programmes?
3. What is the influence of gender on the identified topics in the mathematics and statistics content of work that should be taught early to empower the girl child for

meaningful and sustainable contribution to women empowerment programmes?

Research Hypothesis

Male and female respondents do not differ significantly on the identified topics in the mathematics and statistics content of work that should be taught early to empower the girl child for meaningful and sustainable contribution to women empowerment programmes.

Methods

The study adopted a survey research design. The population of the study comprised 4,800 academic staff and principals working in public and privately-owned tertiary institutions as well as secondary schools in the South-East of Nigeria. Using simple random sampling technique 480 respondents (218 males 262females) were selected and used for the study. The choice of the population is based on the fact that these group of individuals are usually the facilitators of most programmes launched by the Federal or State Government targeted at empowering the girl child.

The instrument for data collection was a 22- items questionnaire developed by the researchers using knowledge gathered from reviewed literatures. The instrument had two sections - A and B. Section A elicited general information from the respondents such as gender, academic staff of a tertiary institution or principal of a school and school location while section B was the 22-items on mathematics and statistics content. This questionnaire was validated by one experienced secondary school mathematics teacher who is a seasoned WAEC examiner and two experts in research instrument development in the Faculty of Education, Abia State University, Uturu. It was a four- point Likert type scale of strongly agree, agree, disagree, and strongly disagree. A mean rating of 2.50 and above was taken to be high level of agreement while a mean rating of 2.49 and below was taken as low level of agreement to the items in the research instrument.

Data collected were analyzed using descriptive statistics such as mean and standard deviation while the onlyhypothesis in the study was tested

using independent t - test. The results are presented below.

Results

Table 1: Mean rating on topics in the mathematics and statistics content that should be taught early to empower the ٱلجول child

SIN	Identified topics in the mathematics and statistics content of work that should be taught early	Mean	Remark
1	Numbers and operations	2.80	High Agreement
2	Mensuration	3.72	High A2reement
3	Geometry	3.50	High Agreement
4	Algebraic processes	3.50	Hi2h A2£eement
5	Measurement of solid shapes and volumes	3.50	High Agreement
6	Commercial and financial arithmetic	3.70	High Agreement
7	Lomritude and latitudes	3.00	Hil?h A2reement
8	Fractions	3.80	High Agreement
9	Logarithms	3.00	High Ae:reement
10	Trigonometry	3.20	High Agreement
11	Surds	2.00	Low A2reement
12	Introductory calculus	2.16	Low A2£eement
13	Graphs	3.20	High Agreement
14	Exponential function	2.00	Low Agreement
15	Probability	3.40	High Agreement
16	Data collection and analysis	3.80	Hi2h. A2£eement
17	Tabular presentation of data	3.60	Hi2h A2£eement
18	Graphical presentation of data	3.50	High Agreement
19	Statistical reasoning on measures of central tendency such as mean, median, etc	3.50	High Agreement
20	Statistics reasoning on measures of dispersion such as variance, making inferences from observed data, etc	3.40	High Agreement
21	Calculating cumulative frequencies (Oirive)	2.06	Low A2reement
22	Calculating T-scores, Z-scores and other statistic around scores	2.10	Low Agreement

From the mean rating on each item on Table 1. The respondents rated highly most topics in the mathematics and statistics content of work the researchers have identified that should be taught early to empower the girl child for meaningful and sustainable contribution to women empowerment programmes.

Table 2: Mean rating of male and female respondents on topics in the mathematics and statistics content that should be taul!ht early to enmower the girl child

SIN	Topics in the mathematics and statistics scheme of work that should be taught early	Gender	n	x	SD	Remark
1	Numbers and operations	**M** F	218 262	72.34 69.54	4.89	High Agreement
2	Mensuration	**M** F	218 262	81.14 71.54	5.80	High Agreement
3	Geometry	**M** F	218 262	81.64 71.32	5.79	High Agreement
4	Algebraic processes	**M** F	218 262	81.64 71.32	5.79	High Agreement
5	Measurement of solid shapes and volumes	**M** F	218 262	81.62 71.31	4.85	High Agreement
6	Commercial and financial arithmetic	**M** F	218 262	76.24 68.54	5.80	High Agreement
7	Longitude and latitudes	**M** F	218 262	81.54 71.84	5.79	High Agreement
8	Fractions	**M** F	218 262	76.24 68.54	5.80	High Agreement
9	Logarithms	**M** F	218 262	76.44 68.34	5.80	High Agreement
10	Trigonometry	**M** F	218 262	37.04 38.25	3.18	High Agreement
11	Surds	**M** F	218 262	37.14 38.45	3.06	Low Agreement
12	Introductory calculus	M F	218 262	37.26 38.85	3.38	Low Agreement
13	Graphs	**M** F	218 262	37.14 38.45	3.18	High Agreement
14	Exponential function	**M** F	218 262	37.14 38.45	3.18	Low Agreement
15	Probability	**M** F	218 262	81.60 71.30	5.78	High Agreement
16	Data collection and analysis	**M** F	218 262	81.74 71.42	5.79	High Agreement
17	Tabular presentation of data	**M** F	218 262	81.14 71.54	5.80	High Agreement
18	Graphical presentation ofdata	**M** F	218 262	81.64 71.32	5.79	High Agreement
19	Statistical reasoning on measures of central tendency such as mean, median, etc	M F	218 262	81.64 71.32	5.79	High Agreement
20	Statistics reasoning on measures of dispersion such as variance, making inferences from observed data. etc	**M** F	218 262	81.60 71.30	5.78	High Agreement
21	Calculating cumulative frequencies (Olrive)	**M** F	218 262	37.14 38.45	3.18	Low Agreement
22	Calculating T-scores, Z-scores and other statistic around scores	**M** F	218 262	31.54 34.04	3.02	Low Agreement

The results of data analysis presented on Table 2. Revealed that the male and female respondents rated highly most of the researchers identified topics in the mathematics and statistics content of work the researchers have identified that should be taught early to empower the girl child for meaningful and sustainable contribution to women empowerment programmes.

Table 3: Independent t-test analysis of male and female respondents on topics in the mathematics and statistics content that should be taught early to empower the girl child

Gender	n	X	SD	df	kaJ.	t- t.ab	Decision
Male	218	82.72	5.42	478	0.89	1.96	Not Significant
Female	262	85.67	4.69				

The result of independent t-test analysis on Table 3 shows that the calculated t-value of 0.89 at 478 degrees of freedom is less than the critical value of 1.96. The null hypothesis is therefore not rejected. Thus, male and female respondents do not differ significantly on the identified topics in the mathematics and statistics content of work that should be taught early to empower the girl child for meaningful and sustainable contribution to women empowerment programmes.

Discussion of findings
The results of this study revealed that the girl child should be introduced early to certain topics in the mathematics and statistics so as to be empowered to contribute meaningful to the evaluation of programmes floated for the women. This finding is in agreement with the outcome of the researcher efforts of Eluwa &Eba(2015); Dougherty, Flores, Louis & Sophia, (2010); Edward, (2010); Chance, delmas & Garfield, (2004); Cobb, (1992); Delmas, & Liu (2005); Derry, Levin, Osama, Jonas & Peterson, (2000); Gal, & Ginsburg, (1994); Groth, & Bergner, (2006); and Hawkins, Joliffe, & Glickman, (1992) who found that the mathematics and statistics curriculum that will empower the girl child with adequate skills for future evaluation of women empowerment programmes geared towards sustainable development must include experiences that incorporate mathematics and statistics content in areas such as numbers and operations, geometry, algebraic processes, statistics reasoning as well as measurement. Therefore, since mathematics and statistics are tool for driving empowerment and sustainable developments in any society in the 21st century, the girl child should be encouraged early to embrace this all-important discipline.

Conclusion
Mathematical and statistical information reveals and give the direction of growth and development of a Nation but this information is only useful to citizens who possesses certain amount of literacy in mathematics and statistics. The early teaching of this all-important disciplines to the girl child in particular and all gender in general is crucial for right attitude formation and high-level achievements in these areas of learning. The revision and implementation of the teaching-learning curriculums in Nigeria should incorporate the reality of the present data needs and dissemination modes around the world so that she can prepare her citizens to be well equipped international data users. The call for action is now particularly for the girl-child.

Recommendations

1. The teaching of mathematics and statistics in early childhood education should introduce simple mathematical and statistical concepts that will form the foundation for future applications of these ideas.
2. The girl child should be engaged early in mathematics and statistics learning because this is when their interest and attitude about learning are formed.

3. Classroom practices should be revamped to emphasize the capability of the girl child when it comes to mathematics and statistics learning.
4. Mathematics and statistics teachers should endeavor to relate mathematics concepts to real life situations.
5. Policy responses are needed to bring in innovative teaching methods into the classrooms of mathematics and statistics.
6. Mathematics and statistics curriculum planners should ensure that there is proper integration of the curriculum in all secondary schools in Nigeria.

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Non-Formal Education Needs of Rural Farmen for Improved Participation in **Community Development in Imo State**

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Abstract

This study found out non-formal education needs of roral farmers for improved participation in community development in Imo State. Two research questions guided the study. Descriptive survey and exploratory research design were adopted Proportionate sampling technique was adopted to select 372 respondents from the total population of 3,720. This formed 10% of the members of registered roral farmers• cooperative societies in Imo State. An instroment tagged "Questionnaire on Non-Formal Education Needs of Rural Farmers for Improved Participation in Community Development (QN-FENRFIPCD) with r = 0.74 was used for data collection. Completed and retrieved 362 copies of questionnaire were analyzed using mean statistics. Results showed that basic adult education, social education, political education, economic education and cultural education are the non-formal education needs of roral farmers in the participation of community development. The study also showed that non-formal education needs make roral farmers gain access to full emotional, social, and intellectual development, enable people to transmit knowledge to new generation for promotion of culture, prepare individual for public activities, equip people with essential literacy and numeracy skills, and prepare individual to become productive member of the community. The study therefore, recommended that education providers should adopt and project the identified non-formal education needs for roral people so as to aid participation in the development of communities. Also that agency for mass literacy, adult and non-formal education should establish adult literacy centres in the roral communities to take care of the illiteracy rate among the roral farmers.

Key Words: Non-Formal Education Needs, Rural Farmers, Participation, Community Development

Introduction

The most valuable asset in rural areas is people. Rural development basically rests with the development of human resources in rural areas. Thus, education, which is supposed to improve the overall quality of the labour force and achieve well-rounded development of human beings, lies in the heart of the rural development issue. It is the key to turning the **large** population from a burden to a potential of growth. Development in its nature is **a** set of changes. The process of rural development is usually accompanied by rapid urbanisation, agriculture industry transformation, technology development etc. Education has been regarded as a potential agent for social change and development and therefore interventions in this direction have been planned and executed at the national and international levels (Karan.am & Panigrabi, 2016). Proper training can help rural people to cope with such socio-economic changes, as well as to seize the development opportunity to improve their livelihood.

Non-Formal Education (NFE) is a term that is often used with terms such as community education, adult education, lifelong education and second chance education. Non-Formal education is defined as any organized and systematic educational activity situated outside of the traditional education system and aimed at providing certain types of education to specific population groups, adults as well as children (UNESCO in Zertuche, 2016). One of the objectives of non-formal education is to expand the learning opportunities of people not enrolled in the traditional school system and to meet the needs of the population more effectively.

In rural communities, the multiplicity of forms and the flexibility of non-formal education are major assets that promote the adaptation of programmes to various rural contexts. Depending on country contexts, it may cover educational programmes to impart adult literacy, basic education for out-of-school people, life skills, work skills, and general culture activities. Non-formal education programmes do not necessarily follow the ladder system, and may be of differing duration (Openjuru, 2009). Non-formal education projects are characterized by great diversity, in terms of teaching methods, the subjects taught financing, objectives, target

population and the qualifications of teaching staff.

There is general recognition that NFE delivery systems servicing rural communities must be appropriate for the needs of the individuals and the communities as a whole. As with curriculum, delivery modes for NFE must be complementary to the needs of the rural communities being serviced. What is most appropriate for one country or one rural community may not be appropriate for another. The extent of physical infrastructural development, the availability of NFE facilities, the level of education achievement and the extent of social and economic development of a community, as well as the types of enterprises providing work opportunities, should all impact on the decision as to the most effective delivery model. In all cases, it is crucial to take a team approach and to follow the principles of active community involvement, relevance and flexibility of the training programme.

Rural communities often can offer significant human, material and intellectual resources. Once these resources are mobiliud and given adequate support and direction, rural communities and their members can become both beneficiaries and important actors in the provision of NFE and in the transformation of the rural space . Non-formal education is not only an alternative means to provide education to people who are unable to attend school, but also as part of providing youth and adults alike with lifelong education. It is becoming popular to include non-formal education as a component within assistance projects, especially in those for comprehensive rural development. In such non-formal education, the acquisition of literacy and numeracy as well as practical skills for **making a** living are centrally positioned (International Institute for Environment and Development (IIED), 2010).

It is in light of the above that Knowles (1970) described non-formal education needs as something that a person has to learn for his own good, for the good of an organization, or for the good of the society. It can be regarded as the gap that exists between a person's present level of competencies and a higher level which is required for effective performance as defined by the individuals, his organization or his society. As a problem-centered activity, non-formal education becomes a tool that will build the capacity of rural farmers to satisfy the imbalance or lack of adjustment between the present condition in the life of the community and a new set of condition that will be more desirable. In identifying those gaps, they could be basic adult education needs, social education needs, political education needs, economic education needs, cultural education needs, health education needs, and environmental education needs. These are important because, they will equip the individuals, including the rural farmers with the desired knowledge and skills that will make them participate effectively in the development of their communities.

Conceptually, basic adult education refers to all those programmes with fundamental education, as well as those programmes with alternative curricular, including areas such as

basic health, nutrition, family planning, literacy, agriculture, and other vocational skills (Lynette & Babara, 2017). The rural farmers need basic education because it is very important for human living. Acquisition of basic adult education will help them have a focus on other areas of needs in the community. It is only when they achieve their basic education needs that other sets of needs come up in the hierarchy of needs. In addition to basic adult education, another education need that could be important to rural farmers is social education.

Social education can be seen as education for sociality, education through social life, education as learning in society, and education for social relationships (Smith, 2014). Thus, it is the education that equips people with knowledge and skills of establishing human relationship, love, peace and harmony, communication, improved family life, among others. Knowledge of social education will make rural farmers gain access to full emotional, social, and intellectual development in relations to self, social institutions, and social issues. Moreso, another education need that could be very important to rural farmers to function effectively in their communities is political education. Political education is an activity aimed at achieving the largest numbers of citiz.ens, who understand political process, independently and critically shape their own opinions and are prepared for public activity (European Youth for Media Network Association, 2012). Political education will help to raise the civic consciousness and increasing participation of rural farmers in the community affairs and the mainstream political process. Acquisition of political education will make them exercise their franchise, know state ideology, and have sound criticisms on state issues. In the same vein, such other need could be economic education.

Economic education is the education provided to assist a rational man in organizing his different thoughts whenever he is faced with day-to-day economic issues and problems (Ibukunolu, 2015). Thus, economic education is the education that prepares one to become productive member of the workforce, prudent saver, investor, and wise decision maker on his available resources. There is, therefore, the need for people to acquire economic education to enable them identify their available resources in the community and make wise decision on the usage and reservation for the rainy days. It will equally equip them with knowledge and skills of dealing with their day-to-day economic issues and problems as they arise in their own areas of authority.

Finally, one other education need that could be vital for the performance of rural fanners in their communities is cultural education. Cultural education refers to education that enables the transmission of peoples' cultural heritage from one generation to another. It equips individuals with a wide variety of high quality cultural experiences that make them to function effectively in their communities. There is the need for rural farmers to have in their fingertips, the values, norms, and traditions of their communities through cultural education. This will enable them to transmit the knowledge to new generation and for promotion of cultural development. Without mincing word, it is pertinent to say that community is a group of people living in a geographical area and is bound with common interest. This implies that in every community, the perception of the people is very important since there are various categories of people in the community, for example, married and single, educated and non-educated. It is very vital that the opinions of these categories of people should be collected to detennine how related or diverse these opinions are in this study.

It is pertinent therefore, to note that a typical feature of the farming population in many developed as well as developing countries is a belief that the only learning necessary in terms of farming techniques can be passed on from generation to generation. In other words, there is a lack of an education and training culture to achieve such purpose. The issue of education and rural development is a recurrent theme. Throughout the world, a great many projects and studies havebeen conducted with a view to enable education to fully play its role in the agricultural and rural development of developing countries. Current trends in the world such as globamation of trade, rapid advancement of technologies, urbanisation in developing nations and migration of labour force within and between countries have a significant impact on rural life. NFE has long been considered a crucial means of providing competent power of individual for socio-economic development in rural areas. Facing the above mentioned changes in today's economic life, however, there is need to provide answers to the following research questions.

Research Questions

1. What are the NFE needs of rural farmers in Imo State?
2. What is the importance of NFE needs on participation in community development among rural farmers in Imo State?

Methodology

This study adopted the survey research design which was both descriptive and exploratory since it aims at creating new knowledge. The descriptive survey design used representative samples of the population in their natural settings. The design is considered appropriate, because it is useful in gathering data about the belief, opinion, attitude, behaviour and records of events that can be analysed and interpreted to measure relationship between variables without any manipulations. The population comprised 3,720 members of registered rural farmers' cooperative societies in Imo State (Imo State Ministry of Finance, 2017). Proportionate sampling technique was used to select 372 respondents from the total population. This formed 10% of the members of registered rural farmers' cooperative

societies in Imo State. A validated self-developed research instrument tagged "Questionnaire on Non-Formal Education Needs of Rural Farmers for Improved Participation in Community Development (QN-FENRFIPCD) with reliability coefficient of 0.74 was used for data collection. The research instrument was designed on modified four-point Likert rating scale. The numerical rating of responses in the research instrument was scored thus: Strongly Agree (SA) = 4, Agree (A) = 3, Disagree (D) = 2 and Strongly Disagree (SD) = 1. The data collected were analysed with mean (i) statistics. Criterion mean (±) for taking decision was 2.5 (4+3+2+1 divided by 4 = 2.5). All items whose values are below 2.5 were disagreed while those above 2.5 were agreed. In a nutshell, the completed and retrieved 362 copies of questionnaire were analyzed and presented in tables below.

Data Analysis and Discussion

Research Question 1: What are the NFE needs of rural farmers in Imo State?

Table 1: Mean analysis on NFE needs of rural farm.en in Imo State

SIN	Item<!	RESPONSE				Total	Mean(f)	Decision
		SA	**A**	**D**	**SD**			
1	Basic adult education which comprises programmes such as, health, nutrition, family planning, literacy, agriculture among others is one of the non-formal education (NFE) needs of rural farmers	239 (956)	93 (279)	18 (36)	12 (12)	362 (4847)	3.54	**Agree**
2	Social education which engender skills of human relationship, love, **peace,** communication, improved family life among others is another NFE necessity for rural farmers	246 **(984)**	86 **(258)**	15 (30)	15 (15)	362 (1287)	3.56	**Agree**
3	Political education which raises the civic consciousness and increased participation of people in community affairs is another NFE need for rural farmers	246 **(984)**	92 (276)	9 **(18)**	15 (15)	362 (1293)	3.57	Agree
4	Economic education which prepares one to be prudent saver,investor, wise decision maker among others is another NFE need for rural farmers	227 (908)	**80** (240)	38 (76)	17 (17)	362 (1241)	3.43	**Agree**
5	Cultural education which comprises values, norms, and traditions of a community is another NFE necessity for rural farmers	254 (1016)	78 (234)	8 (16)	22 (22)	362 (1288)	3.56	Agree
	Grand Mean						3.53	

Table 1 revealed that respondents agreed basic adult education is one of the non-formal education needs of rural farmers with mean 3.54; they also agreed that social education is another non-formal education need of rural farmers with mean 3.56. The table also revealed that political education is a non-formal education need that can aid rural farmers to participate effectively in community development as this has mean of 3.57. Also, the respondents agreed that economic education is another non-formal education need of rural farmers with mean 3.43 and that another non-formal education need of rural farmers in the participation of community development is cultural education need with mean 3.56. However, the grand mean 3.53 shows that basic adult education, social education, political education, economic education and cultural education are the non-formal education needs of rural farmers in the participation of community development. The finding supports International Standard Classification of Education (ISCE) in Wikipedia (2011) that basic adult education is the formal and informal fundamental training or knowledge, skills, and experiences that people acquire or attain to enable them function effectively in their communities. It is the prerequisite to further education. Basic learning needs include literacy, family planning, nutritional values, vocational skill, to mention but a few.

The finding also supports the study by Lee (1980) which suggests that social education is a non-formal education need that can be used to cover "all those teaching or informal activities which are planned by curriculum developers, teachers or other professionals to enhance the development of one or more of the following:

knowledge, understanding, attitudes, sensitivities, competence, in relation to - the self and others, social institutions; structures; and organi7.ations, and/or social issues". Indian American Forum for Political Education (2009) sees political education as non-formal education need that empowers people politically by raising their civic consciousness and increasing participation in community affairs and the mainstream political process. The study is also in line with the view of Okafor (2004) who stated that political awareness is referred to attitudinal term that connotes one's consciousness as regard to his political duties to nation and that of the nation to the citiuns. It is theprocess of making the citizens of a co1U1try to know their political rights which entitle them to participate in the national political life of the state. Cheng (2001) agreed withthe above statement when he said that political education enlightens residents from different perspectives about political points of views and knowledge and values of ideological events.

The study by Ibukunolu (2015) sees economic education as need provided to assist a rational man in organizing his different thoughts whenever he is faced with day-to-day economic issues and problems. However, Darren (2012) posits that cultural education need is an attempt to ensure that every child experience a wide variety of high quality cultural experiences to help him/her function effectively in the society. In other words, cultural education is concerned with the transmission of a people's cultural heritage from one general to another. This will help to transmit the attitudes, values, customs, and traditions of the people from old generation to new ones.

Research

Question 2: What is the importance of NFE needs on participation in community development among rural fanners in Imo State ?

Table 2: Mean analysis on   the importance of NFE needs on participation in community develo ment among rural farmers in Imo State

SIN	Items	RESPONSE				Total	Mean (	Decision
		SA	A	D	SD			
11	Non-formal education needs make mral farmers gain access to full emotional, social, and intellectual development	288 (1152)	65 (195)	(0)	9 (9)	362 (1356)	3.75	Agree
12	Non-formal education needs enable people to tr ansmit knowledge to new generation for promotion of culture	66 (264)	218 (654)	78 (156)	(0)	362 (1074)	2.97	Agree
13	Non-formal education needs prepare individual for public activities	142 (568)	148 (444)	64 (128)	8 (8)	362 (1148)	3.17	Agree
14	Non-formal education needs equip people with essential literacy and numeracy skills that yield high rates on investment	93 (372)	246 (738)	15 (30)	8 (8)	362 (1148)	3.17	Agree
15	Non-formal education needs prepare individual to become productive member of the community	198 (792)	149 (447)	15 (30)	(0)	362 (1269)	3.51	Agree
	Grand Mean						3.31	

Table 2 shows that respondents agreed non-formal education needs make rural farmers gain access to full emotional, social, and intellectual development as this recorded a mean of 3.75; the respondents also agreed that non-formal education needs enable people to transmit knowledge to new generation for promotion of culture with mean of 2.97, item 13 which is on preparing individual for public activities had 3.17 as mean. Additionally, respondents agreed that non-formal education needs equip people with essential literacy and numeracy skills that yield high rates on investment with mean 3.17 and preparing individual to become productive member of the community which is another importance of non-formal education needs had mean of 3.51. However, the grand mean 3.31 is an indication that the importance of NFE needs on participation in community development

among rural farmers in Imo State are to make rural farmers gain access to full emotional, social, and intellectual development, enable people to transmit knowledge to new generation for promotion of culture, prepare individual for public activities, equip people with essential literacy and numeracy skills, and prepare individual to become productive member of the community. This finding is in conformity with UNESCO (2010) which posits that non-formal education needs ensure equal access to education, eradicate illiteracy among people, and improve people's access to vocational training, science, technology, and continuing education. It also encourages the development of non-discriminatory education and training, allocates sufficient resources for and monitors the implementation of educational reforms, and promotes women's and girl's life-long education

and training. NFE needs sustains development, which in turn fosters hope and participation in democracy, justice and active citizenship. Likewise, democracy and active citizenship require new skills and competencies along with the capacities for institution-building. Participatory education programmes empowering rural communities have been invaluable in cementing human rights, raising gender awareness and enhancing the income-generating skills needed to fight poverty (Synthesis Report, 2004).

Conclusion

From the foregoing, it can be concluded that one of the major indices of development in any society is education of its citizenry. Non-formal education becomes a panacea for improving the quality of life in the community. It embraces all range of development activities in any community undertaken by the people, the government or non-governmental organisation. Community development, therefore, relies heavily on people who are the real agents and catalysts of social change and improvement of their communities. For rural farmers to perform very well in their expected roles in the community, non-formal education needs are of utmost necessity. Such needs of non-formal education include: basic adult education, social education, political education, economic education, and cultural education. It is assumed that when they acquire these educational needs, the decline in their community development participation will be reversed and a desired set of conditions will set in.

Recommendations

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

1. Education providers should adopt and project the identified non-formal education needs for rural people so as to aid participation in the development of communities.

2. Rural people should endeavour to actively participate m developing themselves through available non-formal education centres in their communities so as to improve their livelihoods, acquire essential literacy and numeracy skills that will help sustain their communities.

3. Agency for mass literacy, adult and non-formal education should establish adult literacy centres in the rural communities to take care of the illiteracy rate among the rural farmers.

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Civic Knowedlge and Civic Practice among the Citizen in our Society

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Abstract
The study examined the knowledge of citizen and the development of right kind of values, norms and virtues in our society as stated in the National Policy of education and how the right type of attitude could be inculcated for our survival. How civic engagement and civic participation by people has contributed through individual and collective effort has promoted wellbeing and projects in our society. Factors that promotes civic participation was discussed under parents, neighbor and friends. The study farther pointed the importance of collaborative efforts of friends and schoolmates to pursue projects that are viable to the society As a good citizen, individual should cultivate and exhibit an appropriate sence of civic values, right virtues that will help to develop by imparting an acceptable manner of behavior in our various society.

Keywords: Civic knowledge, civic engagement, civic participation.

Introduction

Civic education is one of the subject in the educational system in Nigeria todays it is offered up to the secondary school and it is one of the subjects offered at the West African School Certificate Examination. It is a subject aimed at developing citizens that would appreciate and embrace those values that are exposed in the National Policy of Education for the development of patriotic citizens. The policy emphasized.

The inculcation of nationaJ consciousness and national unity, the inculcation of the right type of values, knowledge, skills and altitudes for the survival of the individual and the Nigerian society. (National Policy of Education 2012)

For a society to grow and develop positively, the citizens must be guided by a set of values the spell out the rights, the roles and the responsibilities of citizens, such set of values must be brought to the awareness of the citizens for them to be able to understand and imbibe the need for building an egalitarian and progressive society. Osu.agwu & Ogbonnaya 1997, utilize & Nasir 2011) Osuagwu & Ogbonnaya 1997:42 captured the essence and value of civics knowledge thus,

Civics education is the process of imparting knowledge, virtues, norms values, attitudes and acceptable manner of conduct and behaviours into the citizen of a community or nation aimed at building a strong community or nation.

The important points to note in the quotation is that civic education contains the nights, roles and responsibilities of the citizens and by bringing the subject into that schools, it is expected to build patriotic citizens that are reliable dedicated to national goals and active in the political social and economic landscape of the nation (Banks, 2005; Ahmad, 2011; Danlaati, 2011; Danladi, 2011).

The goals of civil education are well enumerated in Mezieobi and Mezieebi (2011), and also in the United States Agency for International Development (USAID 2002). The goals are:

Ability to transform youths in the country to be law abiding citizens.

Build up the knowledge of skill acquisition to help them accomplish life goals.

Create the right type of attitude to live an honest and patriotic life.

Exhibit the appropriate sense of duties and obligations as a loyal citizen through

dedication to hard work and commitment to nation building.
Cultivate right civic virtues for welfare of peoples through contribution to wellbeing of others and community at large
Imbibe positive values to help citizen to develop through imparting of knowledge and acceptable manner of behavior in our society.

Despite the fact that the civic education is aimed at producing patriotic citizens, a lot of society ills like cultism, rape, truancy, examination malpractices and several others are still very comm.on in schools. The building of an effective and strong society would become a mirage in a society where all these are common. The question therefore arises, are society aware of the goals and orientation of civic education? If the society are aware of the values, goals and orientation of civic education and citizenship of education all the ills identified above would not be on the rise.

Civic education refers to the study of governments activities rights and responsibilities of citizenship (Collins English Dictionary 2012). Civic education according to Utilu (2011) described the discipline as the essential that provide learners with the process of democratic socialization which promote and support democratic behavior and values among citizens. Ganuju & Wahab (2011), Oyeoku Mezieobi & Okeke (2012) asserted that civic education is a type of education which aids effective democratic process. However Falade (2012) postulated that Civic Education is a set of activities and practices aimed at making both young and adults better equipped to participate actively in democratic life through exercising their rights and responsibility in the society.

Stanford Encyclopaedia Philosophy (2013) defined "civic education" as all the processes that affect people's beliefs. Commitments, capabilities, and actions as members or prospective members of communities UNESCO (2011) citizenship education as one which (among other things) holds the high value of critica] thin]cing which will thoroughly prepares the youths to participate in the political process and incorporates women in critical aspects of the affairs of the country. Armstrong (2004) asserted that citizenship is a key element and a major justification for civic education, the expectation is that good citizenship with education will produce young people who will leave school with a disposition to become actively involved in public affairs and as well contribute fundamentally to social progress.

Citizen education is not just means by which citizens will passively accept the members by participating fully in the democratic society through critical and reflective thin]cing and better understanding of rights and responsibilities of citizenry. It include the knowledge and skills that portraits the products of good. However, civic education will enable the transformation of unequal people in the society into equal and active citizenship.

Literature Review

Civic engagement refers to civic roles, values and activities as cited by Sherrod et al (2010) recognizes that a larger of set activities and engagement which includes political participation in om society though it can not be over emphasised. Falade and Adeyemi (2015) opined that civic education, Nigeria will achieve faster growth and national transformation through national integration, when every citizen acquire and demonstrate civic values and traits in their daily life, thus civic practice through implementation of norms and values, will go a long way in imbibe the right attitude to be good citizenship as well as proper membership of the community Fakorede (2015) asserted that Civic Education as an educational and learning activity directed towards an individual or a state which will enable meaningful development of the state to be achieved or realized. This means that the people in the society has engaged or involved themselves in learning activity to develop their life in particular and the statein general. Through civic engagement, the society will be able to place values on the importance and usefulness of individual to his or her environment and society by identifying the rights and responsibilities as well as certain rights which citizens should enjoy and their expectation as a citizen.

Falade (2015) stressed that national consciousness means the ability of citizens of a country to understand or be aware of what is happening in their environment, Samuel (2011) stated in his own opinion that national integrity is a means of demonstrating the moral principles towards upholding high and strong national values such as honesty, trustworthy among others. Ogundele (2011) conceived that national unity as the state of being in close contact and working together to achieve a purpose. One cannot achieve either national integrity or national unity without been conscious to attain national consciousness, the citizens must be aware of his or her environment, through proper understanding before building an integrity for national unity. One has to admit that all this process went through civic engagement Kirby *et.al* (2011) posited that knowledge provides a foundation for human action because it is what human knows that affect the action or attitude.

Civic engagement promotes participation of people in politics. That is proper knowledge and support for democracy rules and values, reflect the dividend of involvement. The working or activities of the government will be more explicit to members of the public which will lead to political development in Nigeria. Member of a political community or citizen has to participate actively as a member of a democratic society. However information received must reflect in the attitude, acceptance of the right and obligation of that society.

Civic education is a reflection of knowledge and skills which is necessary for civic engagement, this provides citizen the opportunity to acquire new skills and learn to be responsible to contribute to the progress of the community. Youth in any society are expected to participate in civic programmes, activities and projects that will reflect collective responsibility in the community because they will grow to eventually carry out electoral obligations in future through voting or candidate elected to represent his people to justify the political efficiency. Youth are expected to involve themselves in various interactive forum. Such as discussions, seeking informations, communication and on social media or internet services to keep abreast of current issues around the world.

Factors that promote civic participation

Among the factors that promote clVlc participation in our society are friends, parents, neighbourhood among others. Alton et al (2011) postulated that the knowledge an individual has provides basis for his action. Knowledge refers to ability or understanding that requires an action socially and politically. In order to have proper understanding of the operation in a society that call for how to relate and function well in a particular government or political dispensation aim, purpose and how the government would operate according to the constitution to make life more meaningful for the people and entire citizens.

Parents: Alkins and Hart (2003) admitted that family possess affluence to promote community engagement. Social impact of family would have influence on civic engagement of the children. An ability to afford certain things such as hand set, internet services at home and provision of enabling environment will promote youth engagement in the society. Beonika-Gum and Levental (2000) postulated that children from well educated, civilized and rich homes have every advantage to utilize all opportunity at their own disposal to organize and coordinate people locally. Parents can also create enabling atmosphere in their family to encourage youth in a structured programme and participate in the community. Such children who are more connected through their parent, can make things work out both local and internationally.

Neighbor: Neighbourhood has a high level impact through influence and interaction in the society. The norms and values with which the community need to function and reciprocity adolescent in the society. Thus youth can develop a particular interest to make him function, relate well or develop emotional bond to operate in local environment to make it a better living.

Friends: Albanesi & Zani (2007) asserted that school mate are mostly found in the social net works of youth or adolescents. They motivate themselves in any organization for smooth running through proper participation interesting

and exciting programmes they get engaged which influences them; their friends collective support and collaborative effort of youth involvement different activities for the development in our communities. Old students that are committed by assisting the institutions by contributing through personal donation and participating in the school through sponsoring programmes and events like sport, end of the year activities. They embarking on projects to raise the hope of the school. However civic education and awareness occurs anywhere consciously and unconsciously through interaction and discussion in places such as salon, market and worship centers. People often engaged themselves by shearing their views and opinions about life generally. The interaction tends to have additional value and exposure to individual lifes.

Conclusion

It was concluded that there is a relationship between civic knowledge and civic engagement because the family or children that want to involve in c1vtc engagement must be knowledgeable and intelligent before he can impact any idea or knowledge to people. Also nobody can impact knowledge that he does not have definitely. Somebody who want to be involved in civic engagement must ready to interact with people through his attitude. He should not isolate his or her self, he should known the norms and value of that society where he lives or reside. It is certain that the parent's atmosphere must be encouraging and conducive. It was realized that youth or adolescent motivate themselves better than any other group. It was also concluded that civic engagement occurs everywhere in the church, salon, market place and any social gathering.

Recommendations

Children or adolescent must all participate in civic engagement to keep the system going and develop a positive attitude towards civic engagement. Parents or guidance should provide enabling environment for their ward to participate fully through their interaction in the community or town where they reside or live.

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Enhancing the Teaching of Physics Through the Use of let in Senior Secondary Schools

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Abstract
Information and Communication Technology (JCT) has been made an issue that cannot be ignored in education because of the demand due to technological growth in both the private and public sectors of the country's economy. Many pfrysics teachers need to bring their JCT knowledge up to date since JCT tools are considered to be an efficient way to extend the horizons of traditional pfrysics teaching. JCT tools can also support learning strategies where students' projects are i,n,olved thereby improving and enhancing students' interest. This paper sets out to look at the importance of teachers' knowledge and learner's interactions in physics learning, poor academic achievement in physics and some possible causes of this poor performance. The paper also examined the ways pfrysics as a subject can be enhanced using JCT; the concept of JCT; the benefit of JCT in science teaching and learning; the application of JCT in physics education and problems confronting the use of JCT in the teaching and learning of physics. Some solutions to these problems were also suggested.

Introduction

The importance of physics cannot be over emphasized as it forms the basis for technological advancement of any nation. The knowledge of physics plays a very significant role in the economic development of any nation hence the need for the subject to be taught very well to enable students develop interest in the subject thereby improving their achievement in the subject. Effective teaching according to Ogu and Ononugbo (2006) is measured by the expected outcome that follows instruction. For effective learning to take place in physics teaching, two things are imperative; teachers knowledge and the learner's interaction (Kola, 2013). Explaining further Kola (2013) stated that both the teacher's knowledge and the learner's interaction are each categorized into three.

The teacher's knowledge includes the content knowledge, pedagogical knowledge and technological knowledge while the learner's interactions include learner-teaching interactions, learner-learner interaction and learner-environment interaction (Kola, 2013).

- **Content knowledge:** This involves the physics teacher being knowledgeable about physics. The physics teacher must know about physics theories, concepts, principles and laws.
- **Pedagogical knowledge:** This involves the physics teacher knowing about the nature of learning, methods of teaching, how to assess students and how to manage the physics classrooms.
- **Technological knowledge:** This involves the teacher having skills to operate and apply technologies in the physics class.
- **Learner-teacher interactions:** This involves the interaction between students and teachers in the teaching /learning process which includes interaction during lessons and outside classroom interactions.
- **Learner- Learner interaction:** This is the interaction in various group studies either in the classroom or outside the classroom. The implication is that there should be group studies which are very

important to students• learning in physics.

- **Leamer-environment interaction:** This involves various activities carried out by students using community as learning resources making community resources very important to science learning in general and physics learning in particular (Besty, 2013).

Physics is a branch of science that deals with energy and matter together with their interactions. Physics is sometimes referred to as the science of measurement and its knowledge has contributed greatly to the production of instruments and devices that are of tremendous benefits to human race (Omosewo, 2009). Oraifo (2005), opined that physics plays very important role in scientific and technological advancement that affect the lives of mankind. Physics according to Adeyemo (2010) is seen as a discipline that has an abstract nature but despite this abstract nature, its teaching is to bring about scientific thinking in students; a mindset that require students to test out through experimentation.

Unfortunately, over the years, academic achievement in physics has been poor (Aiyelebegan, 2003; Akanbi, 2003; Kola, 2007). According to Olailejo, Olosunde, Ojebisi and Isola (2011) , one of the reasons for such poor achievement in physics is teacher's strategy. The reason for this poor achievement cannot be separated from the fact that there is deficiency in the teacher's knowledge and students' interaction (Kola, 2013). There is therefore a great need to improve academic achievement of students in physics. This can be done through changing the teacher's methods of teaching physics by using appropriate teaching method that is central to a successful learning in physics (Wanbugu and Changeiro 2008). Physics teachers can effectively deliver their physics lessons by using active learning strategies such as ICT tools in the teaching and learning of physics. . Such teaching methods will get the students involved in learning activities that will enable them develop the needed process skills. According to Shedd (2004), physics teachers must incorporate technology into their physics classes since teaching has gone beyond

traditional method of talk and chalk. This implies that the integration of Information and Communication Technology (ICT) in physics classes is very imperative (Aina, 2012). Such methods will create excitement in students and thus induce their critical thinking and conceptual understanding of the subject. According to Kola (2013) Information and Communication Technology (ICT) is an umbrella term that includes any communication device or application. It comprises of radio, television, cellular phones, computers, network hardware and software and satellite systems. Information and Communication Technology also consists of the various services and applications associated with them. These services and applications includes video conferencing and distance learning.

ICTs are defined as basically information - handling tools - a varied set of goal, applications and services that are used to produce, store, process, distributed and exchange information (United Nations Development Programme (UNDP), 2004). According to Mikre (2011), the different ICT tools are able to work together and combine to form 'networked world' - a massive infrastructure of interconnected telephone services, standardized computing handling the internet, radio and telephone which now reaches into every comer of the globe. ICT also refers to audio visual aids such as the transparency and slides, tape and cassettes records and radio; video cassette and television, and film.

According to Crede and Mansell (1998), ICTS are crucially important to sustainable development in developing countries. Supporting this, Thioune (2003) opines that for the past two decades most developing countries have unstressed significant changes that can be traced to ICTs. Anyakoha (1991) described information technology as the use of manmade tools for the collection, generation, communicating, recording, re-management and exploitation of information. It includes according Anyak.oha (1991) these applications and commodity by which information is transferred, recorded, etched stored, manipulated or disseminated. ICTs are credited with the ability to transform, and deep and

significant changes are expected from their indespred use (Ogbonna & Ogbonna, 2008). Stressing on the importance of ICT, the Federal Republic of Nigeria (FRN) (2001), explained that surviving in the information age depends on access to development of any nation in a rapidly changing global environment, and it challenges us to devise initiative to address a host of issues such as reliable infrastructure, stalled human resources, open government and other essential issues of capacity building.

Information and Communication Technology (ICT) can contribute to universal access to education, equity in education, the delivery of quality learning and teaching, teachers' professional development and more efficient education management, governance and administration. The implication is that there is a need for ICT in education.

ICT in education is the teaching and learning with ICT. ICT in education has a multiplier effect throughout the education system by

1. Enhancing learning and providing students with new sets of skills
2. Reaching students with poor or no access
3. Facilitating and improving the training of teachers
4. Minimizing costs associated with the delivery of traditional instruction and
5. Improving the administration of schools in order to enhance the quality and efficiency of service delivery.

The implication of the above is that ICT has the potential to make learning more experimental. The large amount of data and visual available on any topic can be brought to the classroom from all over the world thereby making educational process more meaningful. Educationists have seen the use of computers and the internet as ideal for enhancing the quality of education by making learning more relevant to life. ICT in Education can be seen from two angles

1. The use of ICT for enhancing learning
2. Exposure to the use of ICT in general which will basically include the use of computers.

Considering ICT in Education from both angles will greatly facilitate the acquisition and absorption of knowledge and offering students

unprecedented opportunities to enhance their learning. Mikre (2011) explained that ICT in Education have revolutionized the way students learn today and are now transforming education systems. According to Bransford, Brown and Cocking (1991) as cited in Volman (2005), there is a common belief that the use of ICT in education contributes to a more constructivist learning and an increase in activity and greater responsibility of students. This according to Mikre (2011) limits the role of the teacher to supporting, advising and coaching students rather than merely transmitting knowledge. Supporting this, Volman (2005) opines that the gradual progress in using computers changes from learning about computers to learning computers and finally to learning with computers.

ICT in education is a great help in the constructivist approach of learning - an approach that considers learning as authentic and learner centred where one can design simulated and individualized learning environments to students **(Mikre,** 2011). To achieve the Millennium Development Goals (MDGs), ICT education must be embraced through our academic learning and specifically through physics learning. There are many teaching resources that can be used to teach physics effectively. The philosophy of the Nigerian Certificate in Education (NCE) of physics education is inspired by the desire to help students become intellectually informed in physics, and the need to produce competent and effective teachers with good mastery of content, method and knowledge of the development of the learners (Kola, 2013).

Physics education according to Kola (2013), comprises of numerical techniques, analytical geometry, trigonometry and calculus, mechanics and properties of matter electromagnetism, basic and digital electronics, physics methodology, heat, optics, modem and quantum physics, practice which are unique features of physics education that cannot be compromised. ICT integration into physics learning can be seen as the best solution for improving students' academic performance since ICT attracts students and make them lively in class, promotes students interaction in the

course of learning thereby increasing the effectiveness of teaching and improving students' learning. It is therefore desirable that physics teachers are trained to make use of ICTs in their teaching.

Application of ICT in **Physics Class**

JCT can be applied in the physics class under four main categories ;

1. Finding more about physics and current discoveries through the use of internet, email, CD-Rom, Database, and video coverage.
2. Collecting, handling and interpreting/analyzing data involved in physics through data logging using software such as Excel for spreadsheets and graphs
3. Aiding understanding/explanation of physics concepts, especially visualizing abstract concepts and processing by using models, simulation games, digital video and multimedia adventures and
4. Communicating ideas through the use of presentation software such as PowerPoint digital video, desktop publishing, web based publishing (Old ham, 2003).

Applying JCT in physics concept refers to the set of activities which involves planning, organizing, control, staffing, directing and coordinating JCT towards the goal of developing people as a resource material. Ebong (2004) opined that the physics teacher should be involved in the curriculum reformation since planning the curriculum courses should aim at optimizing the contribution of individuals and groups, integrating related information and communication component and coordinating delegated tasks in the management process.

JCT materials can be applied in the teaching of physics in the following ways.

1. Instrumentation - Appropriate software can be used to describe working principles of sophisticated instruments. For instance the teaching of electric motor in physics can be done with the aid of Encarta educational software.
2. Analysis of Data- Data generated from experiment can be analyzed using appropriate software.
3. Computer can be used to stimulate various phenomena in science to give a better representation of the real life occurrence.
4. Laboratories experiments can also be simulated and put into memory devices for students to learn at their own pace.
5. Lecture and process of learning instruction can be presented with the use of PowerPoint.

Apart from educational software, video and community resource can be used for learning in physics. According to **Kola** (2013), soldering of resistors, transistors and other active electronics components can be done showing videos of electronic technicians at work already to surmount the problem of not carrying out electronic experiments in physics due to the problem of electric power supply in the country. In this way, students will be able to learn how to perform such activity even though they were not directly taught in the class by their physics teacher. Wilson and Redish (1989) also opined that micro computer can be used to acquire data from thermisitor, photodiodes and pressure transistors and be used to teach topics like chain reactions and retroactive decay in nuclear physics which cannot be easily carried out in classroom situation. Computer simulation and video can also be used to teach concepts like optical phenomena, magnetic and mechanic phenomena, movement of air, its interactions and collision which seemed to be abstract to students who find them very difficult to comprehend. According to Kola (2013) Computer Assisted Instruction (CAQ tools like spreadsheet and word processor are used to collect and analyze data.

Aina & Adedo (2013) argued that feed back is very important in teaching and learning process because it improves students' learning. Supporting this Kola (2013) opined that such feedback could be gotten through computer. Explaining further Kola (2013) said that students can learn how to spell words correctly in a word processor when text is being underlined by the computer. According to Nguyen, Williams &

Nguyen (2012), learning activities could be communicated through e-mail system. Students could be in contact with their teacher who is away from school by sending learning activities to their teacher through e-mail. Many teachers supervise their students' project through this method.

Students can also learn a lot through intern.et, social network and online chat. Physical articles in journals are uploaded into website or blog to be accessed for learning (Kola, 2013). Osunade (2003) explained that intern.et is a valuable source of information for students looking for ideas for writing their projects and assignments. Supporting this, Agommuoh and Nzewi (2003) who are exposed to video-based instruction in physics had significantly better results than those who were taught using the conventional method.

Benefits of ICT to Physics Education
Application of ICT to physics education has numerous benefits. According to Kola (2013), such benefits include:
- Helping physics students to learn physics concepts, laws and theories with ease and also retaining what they have learnt in their memory for a very long period.
- Promoting hard work for both physics teachers and students.
- Improving physics students' participation in classroom activities.
- Helping both physics student and teachers to exchange ideas, learning materials and teaching strategies quickly.
- Affording both physics teachers and students the opportunity of organizing seminars, workshops and conferences on uses relating to physics education across the globe without boundary restriction.
- Helping both physics teachers and students sustain and update their knowledge in physics education and
- Helping physics students to understand abstract and very difficult concepts in physics.

Yusuf and Yusuf (2009) opined that the application of ICT in physics education has the potential for enhancing the tools and

environment for physics learning since it allows materials to be presented in multiple media, motivate and engage physics students in learning process, foster enquiry and exploration and provide access to world made information resources. Explaining the importance of ICT in physics education, Okpurukhre, William, Esikpe and Ezewi (2013) opined that through the internet, physics students and teachers can gain access to a rich source of information to keep abreast of new sources of knowledge. They went further to explain that through the internet, digital libraries, physics teachers can easily get access to relevant and current resources in physics. This will therefore enhance the quality of physics students learning through ICT, physics teachers, students Librans and schools can communicate with one another and share information that will enhance understanding of physics concepts. Stressing on the benefits of ICT in physics education Wiki Education (2009) asserted that ICT is beneficial to physics education in the following ways: Giving physics students
- Access to a vanity of learning resources - ICT provides a lot of learning resources that will enhance learning in all aspects of physics.
- !immediacy of information - ICT has a fast pace of imparting knowledge to students thereby enabling physics students to be educated anywhere and at anytime because of the already available information in the intern.et.
- Anytime anywhere learning - ICT make it possible for physics students to study at will. According to Yung (2002), such flexibility in learning has heightened the availability of first - in - time learning and has also provided opportunity were more learners who perilously were constrained by other commitment.
- Authentic and up to date information.
- Access to online Libraries - through internet service where a lot of date are available.
- Individualization of Instruction - ICT encourage students to learn at their own pace.

- The teaching physics is made interesting through ICT tools like video thereby ensuing high reiterations of learning experiences.

Challenges/Bottlenecks to the use of ICTs in Secondary Schools.

Many problems have been militating against the application of ICT in Nigerian secondary schools. Some of these factors impeding the use of ICT in education have been identified by Starr (2011) and Nzewi (2009) to include.

Lacks of training among teachers - many teachers in the secondary schools are computer illiterates and according to Nzewi (2009) in some states where attempt were made to train them, adequate time and resources were not devoted to the exercise.

Inadequate funding to support the purchase of ICT tools like computer.

High enrolment in school - According to Fafunwa as cited in Okeke and Nzewi (2009), the universal primary education led to remarkable increase in school enrolment from 6 million in 1976 to 15 million in 1982. There is therefore an increase in school population without a corresponding increase in the supply of ICT facilities and this has posed a serious problem on the educational system.

Lack of motivation and need among teachers to adopt ICT as teaching tools some teachers are not aware of the innovations JCT has brought to teaching and learning. Processes and have refused to adopt it as a teaching tool.

Lack of skills - Nzewi (2009) observed acute shortage of trained personnel in application software, operating system etc which has resulted in the lack of human skills and knowledge needed to integrate JCT into the education sector.

Conservation attitude of teachers - Teachers have found it difficult to embrace the innovations offered by ICT facilities due to the fact that according to Schein (1988) individuals and organization possess natural tendency to maintain a steady state and any change that disrupts this status quo are viewed with caution.

Irregular and inadequate power supply - there is lack of uninterrupted power supply in Nigeria and this imposes threat to the education system since these ICT facilities require electric power supply for effective functioning.

High cost of technology - computer equipments and others like softwares, printers, scanners etc are very expensive and not easily affordable by schools or individuals.

Solutions

In order to solve some of these problems, the following action should be taken.

1. Government should supply sufficient JCT teaching equipments like computers, projectors and educational softwares in schools and ensure that all schools are internet compliance. Such equipment should be supervised regularly to make sure that they are there and are used for the purpose for which they were supplied.

2. Government should also organize computer conferences, seminars and workshop for physics teachers and make sure that all physics teachers in both private and public secondary schools are mandated to attend these trainings that will improve their competencies in the use of JCTs.

3. Government should fund the schools very well for them to be able to purchase JCT tools and other technologies to be used in the schools.

4. Power generation must be given adequate attention by the government in order to maintain a country with uninterrupted power supply which is the heart of every technology.

5. Physics teachers should be encouraged to have laptops and modem which will enable them have access to internet anywhere and at anytime.

6. Physics students and teachers should be encouraged to have e-mail addresses. Physics teachers should also give their student assignment on internet for them to be able to tap the rich resources from the internet.

Conclusion and Recommendation

The application of ICT in physics education can improve students' academic performance in physics. There is a great need for all the physics teachers to be computer literate so that they can deliver properly to the students. However there are a lot of problems militating against the use of ICTs in the physics classroom. These problems include high enrolment in schools, lack of motivation among teachers and irregular and inadequate supply of electricity. To surmount these problems, the government, individuals, teachers and students have to make necessary sacrifices.

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