



TECHNOLOGY & EDUCATION IN THE 21ST CENTURY

A Festschrift in Honour of
Professor (Mrs.) Comfort Memfin Ekpo
Vice Chancellor, University of Uyo

VOLUME 1

Editors

Eno-Abasi Urua
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Happiness Uduk

Technology and Education in the 21st Century

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From the Editors
A FESTIVAL OF SCHOLARLY WRITINGS

Technology and Education in the 21st Century: A Festschrift in honour of Professor (Mrs.) Comfort Memfin Ekpo, Vice Chancellor, University of Uyo, is a collection of compelling academic research papers across disciplines by a constellation of academic stars in the University of Uyo. The first paper in the festschrift is entitled 'Influence of Educational Technology on Nutrition at sixty' by Ekaete Etuk. The paper's significance lies on the understanding that the health of an individual relative to nutrition; especially as age sets in. The role of technology in nutrition for the aged is examined, even as the gains of technological researches into nutrition are exposed.

Comfort Inyang's paper is on 'PCR and Cloning: A Technology for the 21st Century'; and it is an inspiring documentary on the prospects of cloning in the 21st century given the revolution in the PCR technology. Edu Inam's "Empowering Women and Advancing Science' examines ways which women can be empowered through the framework of science. Specifically, the paper emphasizes the empowerment of women in the areas of Science, Technology, Engineering and Mathematics (STEM).

'Massive Open Online Courses (MOOCS) and Academic Libraries: Perspectives, Opportunities and Challenges in Nigeria' is an innovative paper by a team of two academic Iroko, Felicia Etim and Eno J. Ottong. In an age where science has brought about marked changes in all spheres of life, the application of Information and Communication Technology (ICT) in education is a welcome development. Coming on the heels of Etim and Ottong's paper is 'Overview of Technology Empowered Teaching and Learning and Emerging Digital Divide' by Patricia Basse of the Computer Science Department, University of Uyo. The major concern is providing 'the overview of mostly accessible and motivational teaching tools that are technologically empowered towards enhancement of teaching and learning". The digital divide examined by the author exists 'between users" of technologically empowered tools.

The title of the paper written by Imelda Udoh and Eno-Abasi Urua, is 'Sustaining Nigerian Languages through Use'. The paper of these two academic giants takes a holistic and comprehensive view of indigenous language preservation even in a technologically driven society. Another language-based

ICT Resource Management And Girl-child Access To Education In An African State

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Abstract

This study examined the relationship between the management of ICT resources and girl-child access to education. In order to achieve this purpose, three research questions and one hypothesis were formulated to guide the study. Survey data were obtained from 156 school age girls in Akwa Ibom State using Jimoh's and Mohammed's (2014) modified instruments: ICT Resources Management Questionnaire (ICTRMQ) and Girl-Child Access to Education Questionnaire (GCAEQ) respectively. The face validity of the instruments was ascertained by the researchers and the reliability coefficients of 0.76 and .82 obtained. The data obtained were analysed using, descriptive statistics, Pearson's product moment correlation and t-test statistical tools. The result yielded a significant relationship between the management of ICT resources and girl-child access to education. The extent of ICT Resources Management was on the average. The extent of girl-child access to education was equally on the average. Based on the findings, conclusion was derived and recommendations made that the government should provide the girl-child, their teachers and their schools with adequate ICT resources. The government should also supervise the school based management of the ICT resources.

Keywords: Management, ICT resources, Girl-child, Access to education, African State

1.0 Introduction

There is no gain saying that education is one of the fundamental rights of individuals. This is evidenced in the assertion in Article 26 of the Universal Declaration of Human Rights, which was adopted by the United Nations General

Assembly in December, 1949 that: Everyone has the right to education. Convention on the Rights of the Child (1989) established universal access to primary education with special emphasis on girls, as a goal for children development in the 1990s; World Summit for Children asserted that efforts for the enhancement of women's status and their role in development must begin with the girl-child; and the World Conference on Education for All emphasized that its most urgent priority is to ensure access to and improve the quality of education for girls (UNESCO, 1993).

These provisions notwithstanding, the girl child is often denied the opportunity of this fundamental human right. Girls still account for 60% of the estimated 113 million out-of-school children, with majority living in sub-Saharan Africa and South Asia (Guttman, 2005); about 65 percent of women with primary education or less globally are married as children, lack control over household resources, and condone wife-beating, compared with 5 percent of women who finish high school (World Bank, 2014); there are 26 million African girls out of school, most of them in rural areas; Africa is lagging behind other regions of the world in female enrolment ratios and female literacy. An inspiration drawn from Jomtien's Conference (1990) which was organized to insure access and improve the quality of girls revealed that in African region,

there are about 26 million girls out of school as well as many who attend school but achieve very little success in the school system. Of forty-six African countries reviewed, forty-two have female gross enrolment ratios lower than that of boys. In Mali, Niger, Guinea and Sierra Leone, female enrolment ratios are 17, 21, 24 and 39 per cent respectively. In sub-Saharan Africa, the estimated illiteracy rate (1990) is 41 per cent for men and 64 per cent for women. These global figures shroud female illiteracy rates as exist in Burkina Faso (82 per cent), Sierra Leone (79 per cent), Benin (77 per cent), Ethiopia (77 per cent) and Guinea (76 per cent). In the Arab states, the female illiteracy rate (1990) was estimated at 62 per cent. Compared with other regions, Africa is lagging behind in eradicating illiteracy. In east Asia/Oceania the average illiteracy rate is 33.6 per cent; in Latin America and the Caribbean, 17 per cent; and in the European countries of the Organisation for Economic Co-operation and Development (OECD), 2.6 per cent (p.1).

Despite significant progress in the development of education in Africa during the past twenty years, girls' participation in education continues to trail that of boys; gender continues to play a major role in determining who goes to school. In general, the primary school enrolment ratio for girls in Africa is less than that of boys by at least 20 percentage points in about twenty-two countries; their dropout rate is also greater than that of boys; few girls complete the primary school cycle; the 'gender gap' in schooling, is manifested by disparity in boys' and girls' achievement (Clark, & Elaine, 1998).

According to Guttman (2005) research has shown that millions of girls do not have access to school despite the concerted efforts to push the cause forward. Girls' access to education in South Africa is hampered by sexual violence and abuse (Human Rights Watch, n.d.). The BBC News (2005) in Guttman reported that African patriarchal societal viewpoint favours boys over girls because boys maintain the family lineage. Despite the introduction of free primary education in Kenya which accounted for an increase in enrolment, access to education for girl-child is elusive due to a combination of poverty, disease and backward cultural practices continued to deny the girl-child her right to education (Mwangi, 2004). This shows that a significant number of girl-child is still lacking access to education.

This anomaly is sometimes attributed to customs, poverty, fear and violence. In West Africa, girls are recruited from poor rural families to work as domestic servants in coastal cities or even neighbouring countries. In school, the progress of some girls is often hampered by teacher attitudes and gender-biased textbooks that reinforce negative gender stereotypes. These school-based factors interact with wider social and economic factors that influence school performance along gender lines (UNESCO, 2009).

In line with the goal of "Education for All" come 2015, UNICEF has developed an acceleration strategy for girls' education. There is a Girls' Education Campaign calling for action in 25 countries to maximize the number of girls in school in order to meet global goal for gender parity in education. To meet this commitment, UNICEF has engaged governments, civil society, teachers, families and children themselves in actions to bring attention to the right of every child to an education and advance those strategies that will bring more girls into school and help them succeed once they are enrolled. Therefore the need to employ adequate management of Information and Communication Technology

(ICT) resources for enhancing educational access by the girl child in an African State – Akwa Ibom (AKS). The questions which one must ask are: What is the extent of management of ICT materials in AKS? What is the extent of girl child access to education in AKS? What is the relationship between management of ICT materials and girl child access to education?

Management is the guidance, leadership and control of the effort of a group of people toward some common objectives (Sherlekar in Peretomode, 1996). It is the process through which effort of members of the organization are co-ordinated, directed and guided towards the achievement of organisational goals (Mullins, 2010). Therefore management of ICT resources is a systematic process involving a sequence of coordinated events- planning, organizing, coordinating and controlling or leading – in order to use available resources like time, effort, cost to achieve a desired outcome (which in this case is the girl child access to education) in the fastest and most efficient way within a desired or specific time frame. This situation seems to be lacking in many African countries including Nigeria and Akwa Ibom State in particular. To this end certain organizations like Sweet Mother International in Nigeria is leading a social reform campaign that seeks to engineer a drive to sensitize the government and the people to devote priority attention to girl- child education especially when viewed against the fact that girl-child's education is a central strategy for growth and poverty eradication (Sweet Mother International in Nigeria (2014); and that girls' education contributes to improve quality of life and enhances national development through increased economic production rates; improves hygiene and nutritional practices; and reduces child and maternal mortality rate (UNESCO, 2014).

However these efforts seem to yield little or no result. This is evident in the level of technology used by different countries per subject as presented in Table 1 .

In E-9 countries such as Indonesia, China, India and Brazil, children have gained access to education through the use of ICT. In Nigeria one of the ICT objectives is to empower the youths with ICT skills and prepare them for global competitiveness; another is to integrate ICT into the mainstream of education and training (FRN, 2013). A little wonder how this could be achieved if majority (66.67%) of teachers in Junior Secondary Schools in Abuja municipality could not boot the computer talk less of using it to teach the

students (Anikweze, 2014). Not only do majority of teachers lack ICTs skills, there is scarcity of infrastructural resources to support the use of ICT to support teaching and learning (Jimoh & Mohammed, 2014).

Table 1: Level of Technology (ICT Resource) Used by Different Countries per Subject

Country	Subjects offered	Enrolment (1999-2000)	Technology used
Botswana	All subjects	600 junior secondary	Print, radio
Burkina Faso	French, Maths, Physics	N/A	Radio, TV
Ethiopia	8 subjects	8 400	Print, radio, TV
Ghana	English, Maths, Science	N/A	Print, radio, TV
Guinea	French, Maths, Science	300 secondary school teachers	Print, radio, audio tapes
Malawi	N/A	80 000	Print, audio tapes
Namibia	All subjects	18 325	Print, radio, audio tapes
Nigeria	All subjects	N/A	Print
Zambia	N/A	11 138 (1990)	Print, radio
Zimbabwe	Academic subjects	25 000	Print

Source: Murphy, et al 2002

Nevertheless ICT is a transformation occurring in the formal education sector for enabling people to develop new capabilities necessary for the knowledge/information society. It facilitates networking, knowledge sharing, and interactive learning (Butcher, 2003). It can be used for delivery of educational resources to provide immediate, up-to-date resources, using one or more media, to large numbers of educators and learners, easily and relatively cheaply; facilitating communication, interaction in resources; providing educators with a range of very interesting opportunities for creating resources that allow learners different levels of interactivity (which can lead to the creation of interesting and exciting interaction of learners with educational resources); building and exploiting information bases (Etudor-Eyo, Etuk, & Azunwena, 2010)

According to Anikweze, (2014) ICT tools are very useful resources for learning. This implies that, it is possible for a girl child to gain access to education via ICTs resources such as published books, journals, brochures, magazines, newspaper; entertainment which are stage shows (concerts), role plays; broadcasting which are radio, television, teleconferencing; and telecommunication which are telephone, telegraph, text, post/courier and services (Okafor in Anikwe 2014).

Some people have used ICT to aid electronic mode of knowledge sharing and transmission, which may not necessarily involve physical contact between the teacher and student (Idowu, & Esere, 2013). With ICT access to instruction through the internet is flexible, broad viability and availability of educational opportunities are ensured. It is cost effective system of instruction and learning, and materials can be accessed irrespective of time and space (Jegede, 2002).

Despite the enormous merits of ICT to educational sector and beyond, many children, especially the girl-child, seem to be in the dark concerning ICT, hence usability becomes futile. Sometimes the ICT materials are not provided and where they are available, their management may not be adequate. For instance a study by Jimoh and Mohammed (2014) revealed that students did not use ICT facilities during lectures and assignments nor conduct practical aided with ICT facilities during lectures. They did not also have personal computers to do assignments on their own. Moreover, the study revealed that ICT resources were inadequately managed in Nigeria. In specific terms facilities like television, radio, telephone, electronic typewriters and satellites were inadequate for teaching. Other hardware facilities such as fibre optics, infrared wireless transmission, fax machine, reprographer, scanner, wireless telephone, video tape, video camera, close circuit system and dictating machine were grossly inadequate in supply for teaching-learning process.

However, ICT facilities such as printers, phone answering machine, UPS and laptops and computers were available in adequate quantity. The ICT Software resources such as virus scanner, word processor with HTML, file access tool and Electronic Document Interchange, Natural Language Retrieval, Speech Recognition facility, internet telephony, Dial Access System, CD ROM, Microfilms, micro graphic modem and external CD lighter were not properly managed and as such were inadequately supplied for teaching. Jimoh's and Mohammed's study was on business education students. Although it did not

consider the relevant of managing the ICT resources to girl-child access to education, it is related to the current study. Therefore, against the foregoing background, there was need to study the relationship between ICT resources management and girl-child access to education in an African State-Akwa Ibom.

Problem

Education is a fundamental right of every individual including the girl-child. But it is generally observed that the girl-child is sometimes denied access to education and even where she is allowed access she is limited in the global world where she could obtain information that could have helped her to develop physically, mentally, socially, emotionally, spiritually, politically and economically. This situation seems to render her inexperienced and irrelevant if not unproductive to her community and the society at large. She seems to be lacking in some cognitive, psychomotor and affective skills which inhibit her functionality abilities for optimal citizenship. A few researches conducted to remedy the situation did not consider management of ICT resources for girl-child access to education in Akwa Ibom State. Therefore this study sought to determine the relationship between management of ICT resources and girl child access to education in Akwa Ibom State. In other words, what is the relationship between management of ICT resources and girl child access to education in Akwa Ibom State?

Purpose

The purpose of this study was to determine the relationship between the management of ICT resources and girl-child access to education in an Akwa Ibom State. In order to achieve this purpose, three research questions and one hypothesis were formulated to guide the study.

Research Question

- i. How adequate is the management of ICT resources for girl child access to education?
- ii. What is the extent of girl child access to education through ICT resources?
- iii. What is the relationship between ICT resource management and girl-child access to education?

Hypotheses

1. There is no significant relationship between management of ICT resources and girl child access to education in Akwa Ibom State.

Method

Survey data were obtained from 156 school age girls in Akwa Ibom State. The research instruments used were: ICT Resources Management Questionnaire (ICTRMQ) and Girl-Child Access to Education Questionnaire (GCAEQ). The ICTRMQ had 42 items placed on a four-point rating scale of VA= Very Adequate; A= Adequate; NA= Not Adequate; NVA= Not Very Adequate; while the GCAEQ had 10 items placed on a four-point rating scale of SA = Strongly Agree; A = Agree; SD = Strongly Disagree; D = disagree. For each instrument the ratings were 4,3,2,1 for all positively worded items and vice versa for negatively worded items.

The face validity of the instruments was ascertained by three research experts and the reliability was obtained through a trial study on 20 students who were not included in the actual study. The data obtained were subjected to Cronbach's alpha analysis which yielded the co-efficients of 0.76 and .82 respectively. The instruments were, therefore, administered by the researchers with the help of two trained research assistants. The data obtained were analysed using descriptive statistics and Pearson's product moment correlation statistical tool. The r-value obtained was further translated into t-value in order to enhance proper inference between the two variables under consideration.

For the extent of ICT Resources Management to be considered high the respondent should score at least more than the mid-point of 2.5 between agree and disagree on the GCAEQ and between Adequate and Not Adequate on the ICTRMQ. Besides, the lowest possible score for each respondent on GCAEQ was 10 items x 1 point =10 and the highest possible score was 10 items x 4 points =40. Also, the lowest possible score for each respondent on ICTRMQ was 42 items x 1 point =42 while the highest possible score was 42 items x 4 points =168. Therefore, the total score for each respondent on ICTRMQ was correlated with the corresponding score on GCAEQ. The hypothesis was tested at .05 alpha levels.

Results

Finding on Research Question 1

Table 2: Result of descriptive statistics for the adequacy of ICT resource management

S/N	Items	Mean	SD
Hardware Resources			
1.	Television	3.00*	.92
2	Radio	2.00	.82
3	Telephone	2.58*	1.12
4	Electronic Typewriter	2.25	.93
5	Satellites	2.67*	1.03
6	Fibre optics	2.00	.82
7	Infrared wireless transmission	1.83	1.07
8	Fax machine	1.83	.90
9	Reprographer	1.75	.83
10	Scanner	2.50*	1.19
11	Wireless telephone	2.33	1.03
12	Video tape	2.58*	1.04
13	Printer	2.50*	1.04
14	Video Camera	2.92*	.96
15	Close circuit system	1.83	.99
16	Computer	2.58*	1.26
17	Dictating machine	2.08	.86
18	Phone answering machine	2.00	1.00
19	UPS	3.17*	1.07
20	Laptops	3.17*	1.07
21	CD Player	2.92*	1.11
22	Projectors	2.83*	1.15
Software Resources			
23	Back-up (CDs, Flash drives)	2.50*	1.12
24	Spread sheets	2.67*	1.11
25	Virus Scanner	2.58*	1.32
26	Word Processor with HTML	2.83*	1.28
27	File Access Tool	2.00	.92
28	Electronic Document interchanging	1.75	.60
29	Natural language retrieval	1.92	.96
30	Speed recognition facility	1.83	.90
31	Internet telephony	2.50*	1.26

Finding on Research Question 2

S/N	ITEMS	Mean	SD
1	I use ICT facilities during lectures.	2.58*	.86
2.	I can conduct practical unaided with ICT facilities during lectures.	2.08	1.19
3.	I carry out assignment using ICT independent of lecturers.	2.75*	1.24
4.	I have a personal computer(s) to do assignments on my own.	1.83*	1.07
5.	I visit internet service providers to get information.	3.42*	.96
6.	I can access educational mails through internet	3.25*	.83
7.	Lecturers use power point presentation for lectures.	2.00	1.00
8.	Lecturers make use of ICT facilities, e.g. computer for teaching.	2.42	.96
9.	Practical with students are done using ICT facilities.	2.08	1.04
10.	Assignment to students is prepared using computers.	2.33	1.18
Overall Mean		24.75	7.55

Entries in Table 3 reveal that five (*) out of 10 items indicate a high extent of girl child access to education through ICT resources; while the remaining five items reveal a low access. The result means that the extent of girl child access to education is on the average

Finding on Research Question 3/Hypothesis**Finding on Research Question 3/Hypothesis**

Variable		Girl-child access to education	ICT resource management
Girl-child access to education	Pearson Correlation	1	.666(*)
	Sig. (2-tailed)		.000
	Sum of Squares and Cross-products	8843.250	18037.500
	Covariance	57.053	116.371
	N	156	156
ICT resource management	Pearson Correlation	.666(*)	1
	Sig. (2-tailed)	.000	
	Sum of Squares and Cross-products	18037.500	83039.667
	Covariance	116.371	535.740
	N	156	156

* Significant at the 0.05 level (2-tailed); Critical $r = .159$; $t\text{-Cal} = 10.90$; $t\text{-Crit} = 1.976$

The result in Table 4 shows the calculated r -value of .666. This value is classified as indicating high and strong relationship between ICT resource management and girl-child access to education. (Cronbach in Uzoagulu, 2011) The relationship is also positive meaning that high values in ICT resource management relates to high values in girl-child access to education through ICT resources while low ICT resource management relates to low girl-child access to education through ICT resources.

Table 4 also reveals that the calculated r value of .666 is greater than the critical r value of .159 at .05 alpha level with 155 degree of freedom. The result is significant therefore the null hypothesis that 'There is no significant relationship between management of ICT resources and girl child access to education in Akwa Ibom State' is rejected. The result means that there is a significant relationship between ICT resource management and Girl-child access

to education. The calculated t- value of 10.90 obtained is significant when compared with the critical - t value of 1.976 at .05 level of significance. This result means that ICT resource management significantly influences to Girl-child access to education.

3.0 Discussion of Findings

The study revealed that five out of 10 items indicated a high extent of girl child access to education through ICT resources in Akwa Ibom State; while the remaining five items revealed a low access. The result means that the extent of girl-child access to education is on the average. The result means that the girl child, to a great extent, access education in these areas such as using ICT facilities during lectures, carrying out assignment using ICT independent of lecturers, having a personal computer(s) to do assignments on her own, visiting internet service providers to get information, and accessing educational mails through internet. On the other hand the girl child access to education in these regards: conducting practical unaided with ICT facilities during lectures; lecturers using power point presentation for lectures, lecturers make use of ICT facilities, e.g. computer for teaching, carrying out practical using ICT facilities, and having assignment prepared with computers were on the low side.

The finding of this study collaborates the report at Jomtien's Conference (1990) that there are about 26 million girls out of school as well as many who attend school but achieve very little success in the school system in Africa. Of forty-six African countries reviewed forty-two record lower female gross enrolment ratios than that of boys. In Mali, Niger, Guinea and Sierra Leone, female enrolment ratios are 17, 21, 24 and 39 per cent respectively. In sub-Saharan Africa, the estimated illiteracy rate (1990) is 41 per cent for men and 64 per cent for women. These global figures shroud female illiteracy rates as exist in Burkina Faso (82 per cent), Sierra Leone (79 per cent), Benin (77 per cent), Ethiopia (77 per cent) and Guinea (76 per cent). In the Arab states, the female illiteracy rate (1990) was estimated at 62 per cent. Compared with other regions, Africa is lagging behind in eradicating illiteracy. In east Asia/Oceania the average illiteracy rate is 33.6 per cent; in Latin America and the Caribbean, 17 per cent; and in the European countries of the Organisation for Economic Co-operation and Development (OECD), 2.6 per cent.

The finding also agrees with the findings by (Mwangi, 2004), Guttman (2005) Anikweze, (2014) but contradicts the Unicef's (2013) report that in E-9 countries such as Indonesia, China, India and Brazil, children have gained access to education through the use of ICT. With adequate access to education the girl child will be able to acquire knowledge and realize her potentialities and use them for self-actualization. She can gain access to information that will help her to develop physically, mentally, socially, emotionally, spiritually, politically and economically. With ICT she can gain valuable experience that will make her remain relevant and productive to her community and the society at large.

The study revealed that responses on 22 out of 42 items indicated that the extent of adequacy of ICT resource management in Akwa Ibom State is high; while the remaining 20 items revealed that the extent of adequacy of ICT resource management in Akwa Ibom State is low. The result means that the extent of adequacy of ICT resource management is on the average. Specifically, management of ICT resources such as radio, electronic typewriters, fibre optics, infrared wireless transmission, fax machine, reprographer, wireless telephone, close circuit system, Dictating machine, Phone answering machine, File Access Tool, Electronic Document interchanging, Natural language retrieval, Speed recognition facility, Dial Access System, Micro Graphic, External CD lighter, Graphic Editor, Sharing information real time, Biometric, Corporate lease access were reported by the respondent as below the cutoff point of 2.5. It means that the management of these ICT resources is inadequate. On the other hand, the management of other ICT resources such as television, telephone, and satellites, scanner, video tape, video camera, Printer, Computer, UPS, CD Player, Projectors, Back-up (CDs, Flash drives), Spread sheets, Virus Scanner, Word Processor with HTML, Internet telephony, CD ROM, Microfilms, Modem, and Web browser were reported above the cutoff point of 2.5 which indicate that they were adequately managed.

The finding is a reflection of Jimoh's and Mohammed's (2014) finding that ICT resources were inadequately managed. In specific terms facilities like television, radio, telephone, electronic typewriters and satellites were inadequate for teaching; other hardware facilities such as fibre optics, infrared wireless transmission, fax machine, reprographer, scanner, wireless telephone, video tape, video camera, close circuit system and dictating machine were in adequate in supply for teaching. ICT facilities such as printers, phone answering machine, UPS and laptops and computers were available in adequate quantity. The ICT

Software resources such as virus scanner, word processor with HTML, file access tool and Electronic Document Interchange, Natural Language Retrieval, Speech Recognition facility, internet telephony, Dial Access System, CD ROM, Microfilms, micro graphic modem and external CD lighter were not properly managed and as such were inadequately supplied for teaching. The situation calls for improvement on the management on ICT resources in Akwa Ibom State, Nigeria, and Africa as whole so as to enhance effective access to education among other advantages.

The result on testing the hypothesis revealed a significant relationship between management of ICT resources and girl child access to education in Akwa Ibom State. The result also showed that the relationship between ICT resource management and Girl-child access to education is strong and positive in nature. The result means that when ICT resources are adequately managed the tendency of gaining access to education will be increased because those resources will be made available in adequate quality and quantity. The girl-child will be able use ICT facilities during lectures, carry out assignment, visit internet service providers to get information, and access educational mails through internet, and conduct practical among others. The girl-child teachers will make use of ICT resources such as radio, electronic typewriters, infrared wireless transmission, television, video tape, satellites, Sharing information real time, Biometric, Printer, Computer, UPS, CD Player, Projectors, Back-up (CDs, Flash drives), Spread sheets, Virus Scanner, Word Processor with HTML, Internet telephony, CD ROM, Microfilms, Modem, and Web browser among others to prepare notes for her, prepare power point presentation for her lessons. These will in turn help her to acquire adequate and appropriate knowledge, skills, attitudes and values, which could enable her function optimally as a citizen.

The finding in this study agrees with Anikweze's (2014) finding that ICT tools are very useful resources for learning. It is also in consonance with the finding by Okafor in Anikwe (2014) that, a child can gain access to education via ICTs resources such as published books, journals, brochures, magazines, newspaper; entertainment which are stage shows (concerts), role plays; broadcasting which are radio, television, teleconferencing; and telecommunication which are telephone, telegraph, text, post/courier and services.

The finding agrees with assertion by Jegede (2002) that ICT is cost effective system of instruction and learning materials can be accessed irrespective of time and space. It is not at variance with Etudor-Eyo's, Etuk's, & Azunwena's, (2010) assertion that ICT enhances building and exploiting information bases. It is in consonance with Idowu's and Esere's (2013) assertion that access to instruction through the internet is flexible and ensures broad viability and availability of educational opportunities. ICT aids electronic mode of knowledge sharing and transmission, which may not necessarily involve physical contact between teacher and student.

However, there is a limitation in this study as the data were obtained during holidays. Hence, majority of the girls could not be reached to participate in the study. Attempts were however made to reach as many of them as possible through the use of research assistants. The study could be replicated during school session so that every school age girl-child, especially at the secondary level, could be involved. This will further enhance the generalization of the findings.

Conclusion

Based on the findings of the study it is concluded that the extent of girl-child access to education is fairly on the average and the extent of ICT management is not quite adequate. Also there is a significant relationship between the management of ICT resources and girl child access to education in Akwa Ibom State. This implies that when ICT resources are adequately managed the resources will be made available in adequate quality and quantity, the girl-child will gain an increased access to education

Recommendation

Based on the findings it is recommended that an appropriate level of public funds be allocated to ICT education to ensure that all children, especially the girl-child in the state and Africa as a whole have access to ICT and education through ICT. Individuals, religious bodies and non-governmental organizations should partner, to a greater extent, with the government in the provision of ICT resources for the girl-child; train the girl-child in the usage of ICT resources in order to be able to access education in its totality. The government should

provide teachers of the girl-child and their schools with adequate ICT resources. The government should also supervise the school based management of the ICT resources.

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