A Critical Analysis of the Usage of ICT Tools on Social Studies and Students' Academic Performance in Public Secondary Schools in Uyo Local Government Area of Akwa Ibom State

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ABSTRACT

The study determined the relationship between usage of ICT tools on social studies and students' academic performance in public secondary schools in Uyo Local Government Area, Akwa Ibom State. Three research questions and hypotheses were formulated to guide the study. The population of the study comprised all the 5,029 junior secondary three (JSS3) students in the study area. A sample of 200 students were selected from total population. Simple random sampling technique was used to select 5 public schools from the total population of 14 public schools. A self-structured and validated instrument titled "Information Communication Technology Usage Questionnaire (ICTUQ) was used for data collection. Pearson product moment correlation (PPMC) was used in testing the hypotheses at 0.05 significant level an at 198 degree of freedom. The findings of the study revealed and concluded that the application of ICT tools for accessing information has little or no effect on social studies and students 'academic performance. The study recommended among other things that the Akwa Ibom State Ministry of Education in collaboration with the State Secondary Education Board should provide or supply ICT facilities and organize in-service training to teachers on the application of ICT tools, so as to enhance quality and competence in teaching.

KEYWORDS: ICT Tools, Social Studies, Students' Academic Performance, Public Secondary Schools and Uyo Local Government Area

Introduction

Information and communication technologies (ICTs) are electronic technologies used for information storage and retrieval. ICTs within a very short time has become one of the basic building blocks of modern society, with the field of education has been positively affected by ICTs, in terms of adoptions as tools for teaching, learning, and research (Yusuf,2005). A great deal of research has proven the benefits of ICTs usage to the quality of education (Al-Ansari, 2006). Information and technology has a major role to play in forming the new worldwide economy to deliver fast changes in the society. Within the previous decade, ICT has advanced and changed at such a speed, that developing countries have not been able to catch up with the revolution and have been left behind and thus lag in their communication with the developed countries

ICT acts as the foundation stone of the contemporary world; thus, understanding this technology and its fundamental concepts is considered as part of the core of education (UNESCO, 2010). Technology has the potential to innovate the ways of instruction, where and how learning occurs and the roles of student and educators in the instructional process by contributing components of strength to learning situations involving virtual environment. It is an effective and influential instrument for providing

educational opportunities; thus, it is difficult to envision future learning situations that are not bolstered by information and communication technology.

ICT which stands for the information communication technology is an umbrella term that includes any communication device, encompassing radio, television, cellular phones, computer and network hardware, satellite systems, as well as other services such as video conferencing and distance learning. ICTs are often spoken of in a particular context such as ICTs in education, health care, or libraries (Rouse, 2005). ICT (Information Communication Technology) is an umbrella term that includes any communication device or application, encompassing: radio, television, cellular phones, computer and network hardware and software, satellite systems and so on, as well as the various services and application associated with them, such as videoconferencing and distance learning, "ICTs are often spoken of in a particular context, such as ICTs in education, health care, or libraries" (Abe and Adu, 2010).

The rapid growth in information communication technology (ICT) has brought remarkable changes in our society. The use of ICT is already indispensable in the area of education especially in tertiary and secondary schools. ICTs are the technologies used in conveying, manipulating and storing of data by electronic means. The provide an array of powerful tools that may help in transferring the present isolated teacher-centered and text bound classrooms into rich, student-focused, interactive knowledge environment.

The direct link between the uses of ICT in student's studies has been the focus of extensive literature during the last two decades. While some scholars believe that ICTs improve the student's study habit, others do not support this view. In line with the above, valasidou and Bouzios (2005) stated that students frequently use ICT resources especially internet for their studies, and that internet has huge impact in improving student's study habits. In support of valasiduo and Bouzios (2005) Abdulla, AI–Hawaj, Wajeeh, and Twizell (2008) stated that ICT has the potential to transform the nature of education: where and how learning and teaching takes place and the roles of students and the teachers in the learning process. Karim and Hassan (2006) also noted the exponential growth in digital information has changed the way students perceive study and reading and in how printed materials are used to facilitate study. Leuven (2004) against this view stated that there is no evidence for a relationship between increased educational use of ICT and students' performance. In fact, they find a consistently negative and marginally significant relationship between ICT use and some student achievement measures.

ICT have been utilized in the education since their inception, but they have not always been massively available and deployed in the teaching and learning processes. There are developments in the Nigerian education sector which indicate some level of ICT application in the secondary schools. The federal government of Nigeria, (FRN, 2004) in its national policy on educational recognized the prominent role of ICT in the modern world, and integrated into the teaching and learning processes in Nigeria. To actualize this goal, the document states that government will provide basic infrastructure and training at the primary as well as the junior secondary school system.

Educational institution may utilize ICT to enrich the students with the skills and knowledge for 21st century (Andoh, 2012), such that it can add to worldwide accessibility to education, educational equality, broadcasting of quality teaching

learning programmes, educators' professional growth and to help in obtaining a more effective educational management. Hence, accessibility, inclusion and standard being the key issues of education, can be comfortably addressed through ICT improves the standard of education by encouraging learning through on-going discussion, delayed time discussion, directed instruction, self-learning critical thinking, data seeking and analysis (Yuen Law & Wong, 2010). Utilization of ICT can enhance quality education outcomes, effective instruction, adequate administration of instructional materials and create important abilities in the underprivileged groups (Sharma, 2003), and at the same time influence educational instruction and research process (Yusuf, 2005). It also includes making the following usage possible in the educational system.

The internet is a global network of computers linked together over large distance. Olatokun (2008), opines that internet in education has been used as a tool for researchers to communicate and try to share their research data. Worldwide, the internet has opened myriad new opportunities for students. In reality, it has brought a very open approach on learning, where students are no longer depending on their instructors or textbooks as their only sources of information. The internet allows cost effectiveness in accessing and using both teaching and learning information resources, collaborative and distance education, more than it ever been imagined (Wadi & Sonia, 2004). The internet has countless websites to help teachers develop or improve lessons plans, exchange ideas, obtain information which ultimately may improve their teaching skills.

Bernard and Dulle (2008), observed that limited relevant information resources in the substandard school libraries lead to low level student performance in academics. However, with the internet in trend, students are not any more limited to what is in their libraries. As, a result, the internet widens horizon of students further beyond their local boundaries in terms of information searching. Access and effective use of internet services in secondary schools gives added reading opportunities for students, which in turn supports students' academic performance (Olatokun, 2008),

The digital infrastructure, including individual laptops, is the foundation for a good digital environment (Norwegian ministry of education and research, 2017). Laptop use in education ill increase opportunities for students on several dimensions and affect all subjects. First and foremost, it will give students increased access to programmed that can enhance their learning outcome for example using educational software that corrects grammar or software helping students solve and understand mathematical problems, like the use of GeoGebra.2 in addition, the use of laptop in education would make students able to focus on more complex problems, which in turn can increase students' performance.

During the last ten years, there has been much focus on the place of technology in education (Hatlevik et al., 2013). Already, in 2013 more than 80 percent of second year students in upper secondary education reported that they used laptops always or regularly during class. In August 2017, the Norwegian Government the new digitization strategy for education, which aims to increase technology literacy among the students to make them more equipped to handle the future (Norwegian ministry of education and research, 2017). The strategy states that educational institutions should be in a leading position in digitization as digital literacy will result in better labor market outcomes, and investments in technology at an early stage may increase returns to education drastically. Nigerian government has so far made tremendous efforts in

ensuring the application of ICT in schools. As at September 15, 2016, the Minister of Communications, Barr. Adebayo Shittu reiterated that the government will in no time commence the process of building knowledge Infrastructure Centers equipped with state-of-art ICT facilities across government secondary schools in Nigeria. This was disclosed by the National Information Technology Development Agency (NITDA) in collaboration with National Coding Club.

The new knowledge society is based on exploiting technological advancement (Erstad, 2005). Gaining access to digital tools in education including laptops will, therefore, be important. However, the programme for international student Assessment (PISA) conducted in 70 countries shows that students from countries which have heavily invested in educational information and communications technology (ICT) do not perform better than students in other countries (OECD, 2015b).

The federal ministry of education had launched an ICT- driven project known as school net (www.snng.org) (Federal Republic of Nigeria, 2006; Adomi 2005; Okebukola, 2004), which was intended to equip all schools with computers and communications technologies. In June 2003, at the African Partnership for African Development (NEPAD) launched the e-schools initiative, intended to equip all African high schools with ICT equipment including computers, radio and television sets, phones and fax machines, communication equipment, scanners, digital cameras, and copiers, among other things. It was also meant to connect African students to the internet. The aim of the initiate was to impact ICT skills to young Africans in the primary and secondary schools, and to harness ICT to improve, enrich, and expand education in African countries (Aginam, 2006).

Concerns over educational relevance and quality coexist with the imperative of expanding educational opportunities to those made most vulnerable by globalization are developing countries in general; low-income groups, girls and women, and low-skilled workers in particular. "Global changes also put pressure on all groups to constantly acquire and apply new skills." The international Labor organization defines the requirements for education and training in the new global economy simply as "basic education for all", core work skills for all and "lifelong learning for all". Information and communication technologies (ICTs) which include radio and television, as well as newer digital technologies such as computers and the internet have been touted as potentially powerful enabling tools for education change and reform.

Internet is a computer meditated communication tools, providing the individual with access to a broad spectrum of information and unique communication technologies. The internet is a global system for interconnected computer networks that use the standard internet protocol suite to serve billions of users worldwide. It is a network that consist of millions of private, public, academic, business and government network of local to global scope that are linked by a broad array of electronic, wireless and optical networking technologies.

On the aspect of the use of ICT tools for accessing information, Kulal and Ramesh (2017) conducted a study on role of ICT for accessing e-resources by the Faculty Members and students in Shri MadhwaVadiraja Institute of Technology and Management. Survey method was adopted for data collection through well-structured questionnaire. The questions were randomly distributed among 250 users and 225 (75 from research scholars and 150 from students) valid samples were collected. The

analysis of collected data indicated the significant relevance of internet in accessing information.

In other study conducted by Tamunosemiebi (2012) utilization of Information and Communication Technology (ICT) in user services of Federal University Libraries in south East Nigeria. This study investigated the availability, extent, users' perception, problems and strategies of addressing the challenges of ICT utilization. Five objectives of the study and five research questions were raised to guide the study. A descriptive survey was used for the study, with population of 64 library staff and 12,405 users. All 64 library staff and 400 users constitute the sample, however, 447 (96.3%) constitute the final sample used for the study. The instrument for data collection was observation checklist and questionnaire. In analyzing the data, descriptive statistic such as mean scores and tables was used. The finding revealed that a number of ICT facilities are at different levels of availability in the University libraries under study. It also shows that ICT tools such as E-mail, subject gateways, e-journals, e-books are extensively used to provide references services, in terms of bibliographic tools; CD-ROMs and online databases are widely used. It is further shows that users' perception is that ICT utilization is beneficial, as its aids in enhancing research. Various problems ranging from inadequate budget for ICT facilities, inadequate infrastructure, lack of up-graded ICT skills level of users, inadequate qualified staff in libraries, software and hardware problems are shown to hinder ICT utilization.

On the aspect of ICT for information storage, Rexwhite, Doreen and Akpovoca (2013) conducted a study on the use of databases for information storage and retrieval in selected banks in Delta state. The study was aimed at investigating the use of databases in information storage and retrieval in some selected banks in Delta state, Nigeria. Variables to support the study were reviewed under the following areas: concept of information, concept of databases, concept of information storage and retrieval, role of ICT in information storage and retrieval, and challenges of effective and retrieval. A descriptive survey research was used and data was collected through the use of questionnaire. 92 copies of questionnaire were administered and retrieved back from respondent's statistical tools of simple percentage and frequency count s was used for analysis. Research findings revealed that: parent bodies of banks are the sole source of funding the use of databases in the selected banks of delta state, that these are adequate skilled ICT personnel for rendering services through the storage and retrieval of information/data at the bank. There are ICT software and hardware facilities used for the storage and retrieval of data/information in the bank industry.

Obioha (2005) investigate the roles of ICT in information seeking and storage among research officers in research institutes in Nigeria. The paper case studies the Nigeria Institutes for Oceanography and Marine Research, Lagos using questionnaires, interview, and personal observation and examining relevant records. One hundred and seventy-two research officers of the institute were sampled upon. The study examines awareness, use, storage, exposure to ICT, and improvement on ICT tools among other things. Result shows that ICT plays an immense role in information sourcing, generation, processing, storage/retrieval, dissemination and even entertainment. Also, it shows that for ICT to be used optimally band maximally, there is need to have steady/regular power supply, workable/stable infrastructure and provision of more ICT tools and centers.

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Abdulwaheed, Paul and Aluand (2016) examined the complimentary role of information communication technology (ICT) in Agricultural Knowledge Management in Nigeria. The research examines the contribution of ICT to Agricultural knowledge management, gathering, storing, retrieving, adopting, localizing and disseminating innovations needed for rural farm families and linkages between research and extension systems. The research focused on the situation in Nigeria and strategies to be adopted for enhancement as well as the challenges related to sharing, exchanging and disseminating agricultural information and knowledge. It is important to note that information dissemination can never be very effective in this present age and era without the use of ICT. Information dissemination is crucial to knowledge management. Information becomes knowledge, exchanging and dissemination are elements in a broader theme known as 'knowledge management'.

It is against this backdrop that the researcher embarked on this study to examine the usage of ICT tools on social studies and students' academic performance in public secondary schools in Uyo Local Government Area, Akwa Ibom State

Statement of the Problem

The use of ICT tools for effective teaching and learning process tends to be absent in most secondary schools in Uyo metropolis, thus the attendant problems of ineffective teaching of social studies and poor academic performance among student. One of the objectives of Nigeria's ICT policy is to integrate ICT into the mainstream of education and to provide training. Notably, most social studies teachers have no or very limited experience and expertise regarding ICT in educational application. This has led to underutilization of ICT facilities in some schools where the facilities are available. According to the African symposium (2011) one of the greatest barriers to proper computer education in several parts of the world is shortage of trained teachers, therefore teachers need to be trained to become sufficiently competent to make personal use of computers, to make use of information and communication technology as a mind tool, to become master of a range of educational paradigms that use ICT, and also to become sufficiently competent to make use of ICT as a tool of teaching.

The inadequacy and utilization of this facility in teaching and learning where available; tends to engender poor academic performance among social studies students in the study area. This is seen in the abysmal failure of students in the study area. This is seen in the abysmal failure of students in the study area. This is seen in the abysmal failure of students in the identified subject area (AKS Ministry of Education). Government has so far made tremendous efforts in ensuring the supply and application of ICT in schools, especially in building Knowledge Infrastructure Centres equipped with state-of-art ICT facilities across government secondary schools in Akwa Ibom State order to improve based on the teachers and students in teaching and learning.

In spite of the effort of government in ensuring availability of ICT for adequate utilization, abysmal performances in social studies among student in secondary school were recorded. It is against this backdrop that the study examines the relationship between internet usages and students' academic performances in social studies in Uyo with the view to elicit current data empirically.

Purpose of the Study

The purpose of the study was to examine the relationship between the usage of ICT tools on social studies and students' academic performance in public secondary schools in Uyo Local Government Area, Akwa Ibom State. The study specifically sought to;

1.   To examine ICT use for accessing information and students' academic performances.

2.   To examine ICT use for information storage and students' academic performances.

3.   To determine the ICT use for transferring information and students' academic performances.

Research Questions

The study is guide by the following question;

1.   What is the relationship between the application of ICT tools for accessing information on social studies and student s' academic performances?

2.   What is the relationship between the application of ICT tools for information storage and students' academic performances?

3.   What is the relationship between the application of ICT tools for transferring information and students' academic performances?

Research Hypotheses

The following null hypotheses were formulated to guide the study

1.   There is no significant relationship between the application of ICT tools for accessing information on social studies and students' academic performances.

2.   There is no significant relationship between the application of ICT tools for information storage and students' academic performances.

3.   There is no significant relationship between application of ICT tools for transferring information and students' academic performances.

Methodology

A correlational research design was used in the study. The study was conducted in Uyo Local Government Area. The population of the study comprised all the 5,029 junior secondary three (JSS3) students in the study area. A sample of 200 students were selected from total population. Simple random sampling technique was used to select 5 public schools from the total population of 14 public schools. A self-structured instrument titled "Information Communication Technology Usage Questionnaire (ICTUQ) was used for data collection. The instrument was validated by two experts in the Department of Educational Foundations through face and content validity. Cronbach Alpha technique was used to determine the level of reliability of the instrument. The reliability coefficient obtained was 0.71 and this was high enough to justify the use of

the instrument. Pearson product moment correlation (PPMC) was used in testing the hypotheses at 0.05 significant level an at 198 degree of freedom.

Results and Discussion

Hypothesis 1: There is no significant relationship between the application of ICT tools for accessing information on social studies and students' academic performances.

TABLE 1: Pearson Product Moment Correlation analysis of the relationship between the application of ICT tools for accessing information on social studies and students' academic performances.   (N = 200)

Variables	N	$\sum X$ $\sum Y$	$\sum X^2$ $\sum Y^2$	$\sum XY$	r-value	r-crit	Decision
Application of ICT tools for accessing information		4646	94695				
	200			140514	0.051	0.064	*
Students' academic performance		7148	94636				

*p<05; df = 198; Critical r = 0.064

The data in Table 1 shows that there is no significant relationship between the application of ICT tools for accessing information on Social Studies and students' academic performance. This is supported by the calculated r-value of 0.051 wi5th the degree of freedom of 198 which is less than the critical r-value of 0.064 at 0.05 level of significance. Hence, there is no statistically significant relationship between application of ICT tools in accessing information on Social Studies and students' academic performance. The null hypothesis is accepted.

Hypothesis 2: There is no significant relationship between the application of ICT tools for information storage on social studies and students' academic performance.

TABLE 2: Pearson Product Moment Correlation analysis of the relationship between the application of ICT tools for information storage on social studies and students' academic performance.   (N = 200)

Variables	N	$\sum X$ $\sum Y$	$\sum X^2$ $\sum Y^2$	$\sum XY$	r-value	r-crit	Decision
Application of ICT tools for information storage		4605	93785				
	200			138763	0.056	0.064	*
Students' academic performance		7148	94636				

*p<05; df = 198; Critical r = 0.064

The data in table 2 shows that there is no significant relationship between the application of ICT tools for information storage on Social Studies and students' academic performance. This is support by the value of the calculated r-value 0.056 with the degree of freedom of 198 which is less than the critical value of 0.064 at 0.05 level of significance. Hence, there is no statistically significance relationship between

application of ICT tools for information storage on Social Studies and students' academic performance. The null hypothesis is accepted.

Hypothesis 3: There is no significance relationship between the application of ICT tools in transferring information on social studies and students' academic performance.

TABLE 3: Pearson Product Moment Correlation analysis of the relationship between the application of ICT tools in transferring information on social studies and students' academic performance.   (N = 200)

Variables	N	$\sum X$ $\sum Y$	$\sum X^2$ $\sum Y^2$	$\sum XY$	r-value	r-crit	Decision
Application of ICT tools for transferring storage		4644	22201				
	200			140243	0.061	0.064	*
Students' academic performance		7148	94636				

*p<05; df = 198; Critical r = 0.064

The data in Table 3 shows that there is no significant relationship between the Application of ICT tools for transferring information in Social Studies and Students' Academic Performance. This is supported by the value of the calculated r-value 0.061 with the degree of freedom of 198 which is less than the critical r-value of 0.064 at 0.05 level of significance. Hence, there is no statistically significant relationship between application of ICT tools for transferring information in Social Studies and Student Academic Performance. The null is accepted.

Discussion of Findings

The relationship between application of ICT tools for accessing information on social studies and students' academic performance. The finding revealed that the calculated r-value of 0.051 was less than the critical r-value of 0.064 of the 0.05 significant levels with 198 degree of freedom, hence the null hypothesis was accepted, which implies that there is no significant relationship between accessing information on social studies and students' academic performance in the secondary school in UYO LGA.

The finding however indicated that students' academic performance in social studies does not depend on the use of ICT tools for accessing information. This is in agreement with Leuven (2004) study that there is no evidence for a relationship between increased educational use of ICT for accessing information and marginal significant relationship between ICT uses for accessing information and some students' achievement measure in the secondary schools. Contrary to the above finding, Kulal and Ramesh (2017) posited that application of ICT tools for accessing information was significantly related with students' performance especially in the area of accessing recent empirical studies for projects.

The relationship between application of ICT for information storage and students academic performance. The finding revealed that calculated r-value of 0.056 was less than the critical r-value of 0.0064 at the 0.05 significant levels with 198 degree of freedom. Hence, the null hypothesis is accepted. This implies that there is no significant relationship between information storage and students' performance in the social

studies in the Secondary Schools in Uyo LGA. This may be as a result of inadequate facilities in the studies by Rexwhite, Dorean and Akpovoka (2013) which indicated significant relationship between ICT tools use for information storage in the banking sectors. The relationship between application of ICT tools for transferring information and students' academic performance.

The finding revealed that calculated r-value of 0.061 was less than the critical r-value of 0.064 at the 0.05 significant levels with 198 degree of freedom. Hence, the null hypothesis was accepted. The implication is that there is no significant relationship between transferring information and students' academic performance in social studies in the Secondary Schools in Uyo LGA. The findings showed that application of ICT tools for transferring information has nothing to do with students' academic performance in social studies in the Secondary Schools in Uyo LGA.

The finding is in line with an earlier study by Efe (2016) who found low level of utilization of ICT. The reasons for low level automation were attributed to lack of funds, faulty equipment and obsolete computer systems. The finding is contrary to the study of Abdulwasheed, Paul and Aluand (2016) which revealed ICT usage as effective for sharing, exchanging and disseminating of agriculture information and knowledge.

Conclusion

Based on the findings of the study, it was concluded that the application of ICT tools for accessing information has little or no effect on social studies and students 'academic performance.

Recommendations

Based on the finding of the study and the conclusion drawn, the following recommendations were made:

1. Akwa Ibom State Ministry of Education in collaboration with the State Secondary Education Board should provide or supply ICT facilities and organize in-service training to teachers on the application of ICT tools, so as to enhance quality and competence in teaching

2. The state Government should ensure full Integration of ICT facilities in teaching and learning process for storage of storage of relevant class lesson and practices

3. Other Stakeholder in Education should be involved in building operation and transfer policy for sustainability of ICT service in the school system.

REFERENCES

Abdulla, Y., Al-Hawaj, W. E, Twizell, E. H (Ed.) (2008). *Higher Education in the 21st century: Issues and challenges*. London, UK: Taylor and francis Group

Abdulwaheed, A, Paul O. T, &Alu, F. (2016). The complimentary role of Information Complimentary role of Information Communication Technology (ICT) in Agricultural Knowledge Management in Nigeria. *Greener Journal of Agricultural Sciences;* 2(1) 173-179.

Adomi, E. (2010): A survey of Cyber café' in Delta State, Nigeria. *The Electronic Library*, 21(5); 487-495.

Aginam, E. (2006). *NEPAD scores students' ICT education in Africa Low.* Vanguard. Available at: http//www.vanguardngr.com/

Al-Ansari, H. (2006). Internet use by the faculty members of Kuwait University. *The Economic Library*, 24(6), 791-803.

Andoh, C. B. (2012). Factors influencing teachers' adoption and integration of information and communication technology into teaching: A review of the literature. *International Journal of Education and Development using Information and Communication Technology*, 8(1), 136-155.

Efe, S. I. (2016). Assessment of the use of information and communication technology in data storage and information dissemination in Nigerian meteorological station. *The Electronic Library*, 24(2); 237-242.

Erstad, O., Klovstad,V., Kristiansen, T. & Soby, M. (2005). *Digital SkoleHver Dag-om HelhetligUtviklingav Digital Kompetanse I Grunnopplaeringen* (Norwegian centre for ICT in Education). Retrieved from: https://www.udir.no/Upload/

Federal Republic of Nigeria (2004). National Policy on Education. NERDC, Abuja

Hatlevik, O. E., Egeberg, G., Gumundsd' otter, G. B., Loftsgarden, M. & Loi, M. (2013). Monitor Skole 2013-Om Digital Kompetanseog Erfraringermed Brukav IKT I Skolen (*Norwegian Centre for ICT in Education*). Retrieved from: https://iktsenteret.no/sites/iktsenteret.no.files/attachments/itu/_monitor_2009_fullsten ding_rapport.pdf.

Karin, N. S & Hassan, A. (2006). Reading habits and attitudes in the digital age: Analysis of gender and academic programme differences in Malaysia. *The Electronic Library,* 25(3), 288-297.

Kulal, U. S. & Ramesh, A. P. (2017). *Role of ICT for accessing e-resources by the faculty members and students:* Shri MadhwaVadiraja Institute of Technology and Management. Retrieved from: http://unesdoc.unesco.org/

Leuven, E., Lindahl, M., Oosterbeek, H. & Webbink, D. (2004). *The effect of extra funding:* Disadvantaged pupils on Achievement. *IZA Discussion Paper.* No. 1122. Bonn: Institute for the study of labor. Online www.ijern.com58

Norwegian Ministry of Education and Research (2017). *Framtid, Fornyelseog Digitalisering–Digitaliseringsstrategi for Grunnopplaeringen* 2017-2021. Retrieved from: hhtps://www.regjeringen.no/contentassets/

Obioha, J. (2005). The role of ICT in information seeking and use amongst research officers in research institutes in Nigeria: The Nigerian institute for oceanography & marine research institute experience. *Journal International Information & Library Review,* 303-314,

OECD, (2015). *Students, Computer and Learning: making the connection*. OECD Publishing Paris. Retrieved from: http://dx.doi.org/10.1787/978926423955-en.

Olatokun, W. M. (2008). Internet access and usage by secondary school students in a Nigerian Municipality. South *African journal of libraries and information science,* 74(2), 138-148.

Rexwhite, E. T., Dorean, O. Y. &Akpovoka, E. O. (2013). The use of databases for information storage and retrieval in selected banks in Delta State, Nigeria. *International journal of scientific and technology research*, 2(3), 17-22

Rouse, M. (2005*). Definition of Information and Communications Technologies- or Technologies.*

Sharma, R. (2003). *Barriers in using technology for education in developing countries. Computers & education*, 41(1), 49-63.

UNESCO, 2002). *Information and Communication technology in education: a curriculum guide for schools and programs of teacher development.* Division of higher education. Retrieved from: http://unesdoc.Unesco.org/images/0012/ 001295/129538e.pdf.

Valasiduo, A., sidiropoulos, D., hatzis, T.&bousiou. M. (2005). Guidelines for the design and implementation of e-learning programmes, preceding of the *IADIS international conference.* E –society 2005, 27 June-30 June, Qawra, Malta.

Wadi, A. & Sonia, G. (2005). Evolving role of ICT in teaching, research and publishing, *Nigeria tribune*, Friday, 30 April, 30-31.

Yuen, A., Law, N., & Wong, K. (2003). ICT implementation and school leadership case studies of ICT integration in teaching and learning. *Journal of Educational Administration,* 41(2), 158-170.

Yusuf, M. O. (2005). Information and communication education: Analyzing the Nigeria national policy for information technology. *International Educational Journal* 6(3) 316-321.