Original Research Article

Factors Militating against Effective Teaching and Learning of Computer in Secondary Schools in Enugu State Nigeria

Abstract

The teaching and learning of computers in secondary schools is very beneficial for preparation of student for more challenging education in the University. However, many factors militate against the effective computer education in the schools. This study sought to assess factors that militate against effective teaching and learning of computer in secondary schools in Enugu State Nigeria. Specifically it sought to assess teachers-related factors; students-related factors; government-related factors and school administrative factors that militate against effective teaching and learning of computer in the State. The study adopted survey research method and hundred questionnaires were used for the study. Data were analysed with the use of descriptive statistics (mean) in SPSS. Respondents agreed that teachers based factors that contribute to ineffective teaching and learning of computers in secondary schools included that teachers of the subject were unqualified ($\bar{x}$=2.9) and lack experience ($\bar{x}$=2.6). Students based included absenteeism by students ($\bar{x}$=2.7) and lack of interest by students ($\bar{x}$=2.7). Government based factors included that government provide voluminous curriculum ($\bar{x}$=2.9) and do not provide funds ($\bar{x}$=3.2). School administration based factors were that mis-management of procured instructional materials ($\bar{x}$=2.9) and mis-use of provided funds ($\bar{x}$=2.9). This study concludes that student, teachers, government and school administration have important roles to play for effective teaching and learning of computer in secondary schools. For a way forward, the study recommends that government and individuals should encourage in and out of school computer education by establishing learning centres in the State. Computer teachers should always be provided with on-the-job training or re-training programmes. Government and school administration should as a matter of priority provide computer systems and other lacking instructional materials in their schools. Students should attend to classes and improve their interest in computer education.

Keywords: Teaching; Nigeria; Computer

Introduction

The importance of computer skills and knowledge for teaching, learning and job performance in organizations especially secondary schools cannot be over emphasized. In the era of just-in-time technology, just-in-time training is now a critical part for success in organizations (Mohsin and Sulaiman, 2013). The secondary schools prepare students for university educations in Nigeria. It is a fundamental level of education that lays foundation for admission and choice of career options for students in Nigeria. Secondary school curriculum in Nigeria is designed to encourage all students to achieve their career, intellectual and social potential as well as to understand the relevance of learning in their daily lives (Ahmadi & Lukman, 2015). The learning and teaching of computer in secondary schools is essential for promotion and adoption of the technological advancements and benefits of computer. In line with this, Ogbuiyi, (2015), stated that the

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increase use of computer by students and academics alike is an important measure of technological development. He further stated that the use of computer is now dominant in all areas of human endeavors more especially in academic institutions (Ogbuiyi, 2015). Computers enable students to manage and handle information and learning materials as well as processing or using information for writing with more speed and accuracy regardless of the time and distance. This is due to the capability of computers in providing dynamic and proactive teaching-learning environment (Arnseth & Hatlevik, 2012). It is essential that students should acquire computer trainings and skills in order to have to use the computers effectively. Integration of Information, Communication, and Technology (ICT) will assist teachers to the global requirement to replace traditional teaching methods with a technology-based teaching and learning tools and facilities (Ghavifekr & Rosdy, 2015). Hence, effective teaching and learning of computers in secondary schools will promote their ability to successfully gain admissions and complete University education as well as work efficiently in organizations using computers.

Technology and computers have become the knowledge transfer highway in most countries (Ghavifekr & Rosdy, 2015) including African countries. Amiya (2014) notes that remarkable improvements have taken place in all sphere of human activities in all societies since the advent of new technologies. The use of technology in education contributes a lot in the pedagogical aspects in which the application of computers will lead to effective learning with the help and supports from computer elements and components (Jamieson-Procter et al., 2013). The state of computer learning and teaching in African countries, including Nigeria is minimal compared to other developed countries. In order to have computer training successfully implemented in Africa, there is a need to consider the cost, human capabilities and infrastructure among others (Phiri, Foko, and Mahwai 2014). Unfortunately, African countries especially Nigeria lacks the funding and capacity to effectively implement computer trainings in secondary schools. Ogbuiyi, (2015), noted that inadequate computer in the schools and lack of computer literacy and sponsorship to computers/IT training program are the major challenges encountered in Nigeria. Poor service caused by capacity constraints of the communication network, lack of infrastructure to support technology hardware and software, scarcity of financial resources, and an unreliable electric supply in Nigeria hinders computer usage in Nigeria (Akanbi & Akanbi, 2012; Nwabueze, Nwabueze, & Egbra, 2013; Tayo, Thompson, & Thompson, 2015). For the case of Enugu State, Nwokike (2015), revealed that non availability and acute shortage of this new technological equipment impede their integration in teaching in the State.

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Many researchers (including David, 2016; Nwokike, 2015; Olelewe & Okwor, 2017); have studied the importance, availability and use of computer in teaching and learning in Enugu the but have not examined the factors that militate against effective teaching and learning of computer in Secondary schools the State. While educational institutions are challenged to provide up-to-date equipment and software packages, educators must also recognize the need to keep abreast of pertinent instructional techniques and trends. In the context of integrating new technologies in schools, factors contributing on either the teacher level or the school level are known to contribute to the use of ICT (Lorenz, Eickelmann, & Gerick, 2015). So far only a few studies aimed to examine the effect of school- and teacher-related factors on cross-curricular digital competencies of students such as computer and information literacy (Lorenz et al., 2015). Hence, this study sought to assess the factors that militate against effective teaching and learning of computer in Enugu State. Specifically it sought to assess teachers-related factors; students-

related factors; government-related factors and school administrative factors that militate against effective teaching and learning of computer in the State.

Methodology

The study was carried out in Enugu State, Nigeria with focus on Isi-Uzo Local government area (LGA) of the State. Enugu State is one of the 36 States in Nigeria, apart from the Federal Capital Territory. Located between latitudes 5^0 $56^{'}$ N and 7^0 $55^{'}$ E of the Greenwich meridian (Ogbonna and Agwu, 2013). The State is bounded in the northeast by Ebonyi State, on the north by Benue and Kogi States and to the west by Anambra State from which it was carved out in 1991 and In the south it borders with Abia State (Ogbonna and Agwu, 2013). Administratively, Enugu State is divided into 19 Local Government Areas including Isi-Uzo LGA.

Population of the study involved all the students in all the public secondary schools in the Isi-uzo LGA. Five secondary schools were purposively selected based on inclusion of computer education in their curriculum. The study adopted survey research method because it focus on opinions, attitude, motivation and perceptions. Twenty questionnaires were administered to teachers and students of each school, hence hundred completed questionnaire were used for the study. The questionnaire was divided into four sections based on the objectives of the study. To ascertain the factor militating against effective teaching and learning of computer in the area, possible teachers-related factors; students-related factors; government-related factors and school administrative factors were listed for the respondent to select on a four point Likert-type scale of strongly agree, agree, disagree, strongly disagree. Data were analysed with the use of descriptive statistics (mean) in SPSS.

Results and Discussions

Teachers-related factors that militate against effective teaching and learning of computer

Data in Table 1 shows that the respondents agreed that teachers based factors that contribute to ineffective teaching and learning of computers in secondary schools were that teachers of the subject were unqualified ($\bar{x}$=2.9), lack experience ($\bar{x}$=2.6) and were not well paid ($\bar{x}$=2.6).

Table 1: Teachers-related factors that militate against effective teaching and learning of computer

Teachers-related factors	Strongly agree	Agree	Disagree	Strongly disagree	Mean ($\bar{x}$)	Remark
The teachers of computer education are unqualified	30	37	28	5	2.9	Agreed
Teachers lack experience	21	26	45	10	2.6	Agreed
Teachers are using teaching aids effectively	15	29	30	26	2.3	Disagree
Teachers are not well paid	25	25	34	16	2.6	Agreed
Teachers have full interest in their jobs	12	26	39	23	2.4	Disagreed

Teachers use up-to-date methods of teaching and current lesson presentation	11	10	33	46	1.9	Disagreed

The findings imply that teachers have important roles to play in the teaching and learning of computer in secondary schools. This agrees with Ghavifekr & Rosdy (2015) that in conjunction with preparing students for the current digital era, teachers are seen as the key players in using computers in their daily classrooms. From this perspective, research shows that teachers in a variety of roles are crucial factors for the digital education in the 21st century (Davis, Eickelmann, & Zaka, 2013). Hence, teachers should be well trained and paid as well as put in much interest and expose themselves to works that will improve their experience in the use of computers for teaching and learning.

Student-related factors that militate against effective teaching and learning of computer

Data in Table 2 shows that the respondents agreed that students based factors that contribute to ineffective teaching and learning of computers in secondary schools were absenteeism by students ($\bar{x}$=2.7) and lack of interest by students ($\bar{x}$=2.7).

Table 2: Students-related factors militating effective teaching and learning of computer

Students-related factors	**Strongly agree**	**Agree**	**Disagree**	**Strongly disagree**	**Mean (x)**	**Remark**
Student like the subject	29	14	19	38	2.3	Disagreed
Students are being motivated	19	29	39	17	2.4	Disagreed
The subject is being well understood by the students	16	29	40	15	2.4	Disagree
Students react positively towards learning of computer	18	17	43	22	2.3	Disagreed
Irregular to classes/Absenteeism by students	22	41	20	17	2.7	Agreed
Lack of interest by students	31	34	25	10	2.7	Agreed

This implies that student have to attend computer classes and put in great interest in the learning so that it can be effective. This agrees with Tayo et al., (2015) that most of the participants acknowledged the benefits on computers and Internet access whereas a few participants expressed no interest in computers or the Internet. Results from a multi-level analysis have shown that higher levels of mastery orientation and self-efficacy and the students' family background were predictors of students' levels of digital competence (Hatlevik, Ottestad, & Throndsen, 2014). Furthermore, it could be shown that students' ICT competency was affected by the level of ICT competency among the teachers and their willingness to use ICT in their

lessons (Aoki, Kim, & Lee, 2013).Therefore, for effective teaching and learning of computers in secondary schools, students need to develop high interest and expose themselves to computer education.

Government-related factors that militate against effective teaching and learning of computer

Data in Table 3 shows that the respondents agreed that government based factors that contribute to ineffective teaching and learning of computers in secondary schools were that government provide voluminous curriculum ($\bar{x}$=2.9), governments do not provide funds ($\bar{x}$=3.2), educational policies are strict ($\bar{x}$=2.8), teachers are inadequately trained ($\bar{x}$=2.9), and there insufficient power supply ($\bar{x}$=2.9)

Table 3: Government-related factors militating effective teaching and learning of computer

Government-related factors	Strongly agree	Agree	Disagree	Strongly disagree	Mean (x)	Remark
Government provide voluminous curriculum	26	46	18	10	2.9	Agreed
Governments do not provide funds	45	33	15	7	3.2	Agreed
Educational policies are strict	23	47	17	13	2.8	Agreed
Teachers are inadequately trained	30	33	36	1	2.9	Agreed
Salaries are being appropriately paid	13	18	35	34	2.1	Disagreed
There insufficient power supply	34	37	12	17	2.9	Agreed

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These findings imply that for effective teaching and learning of computers in secondary schools, government have some roles to play. This agrees with Tayo et al. (2015) that the lack of adequate training on using a computer and Internet searching was a foremost issue that was persistent throughout responses to multiple interview questions. Similarly, it agrees with Nwabueze et al. (2013) that government should bring more opportunity for computer awareness training, expand existing infrastructures, wireless communication facilities, mobile telecommunication networks, and make computer and Internet use affordable. It further agrees with (Tayo et al., 2015) that Nigerian government should embrace cultures and policies that will promote access and use of ICT. Government have to provide appropriated curriculum that will suit the learning at that level of education, provide adequate funding, educational policies, qualified teachers and improved power supply.

School administration factors that militate against effective teaching and learning of computer

Data in Table 4 shows that the respondents agreed that school administration based factors that contribute to ineffective teaching and learning of computers in secondary schools were that they mis-manage procured instructional materials ($\bar{x}$=2.9), the school administrators mis-used provided funds ($\bar{x}$=2.9), there are no available laboratories and facilities ($\bar{x}$=2.8), administrators implement difficult policy ($\bar{x}$=2.7) and unqualified teachers are being recruited ($\bar{x}$=2.8).

Table 4: School administration factors

School administration factors	Strongly agree	Agree	Disagree	Strongly disagree	Mean (x)	Remark
Mis-manage procured instructional materials	17	65	13	5	2.9	Agreed
Provided funds are being mis-used by the school administrators	34	31	23	12	2.9	Agreed
Proper scheduling if time-tables	10	27	46	11	2.3	Disagreed
No available laboratories and facilities	31	36	13	12	2.8	Agreed
Administrators implement difficult policy	15	52	22	11	2.7	Agreed
Unqualified teachers are being recruited	29	34	23	14	2.8	Agreed

The findings imply that school administration need to manage procured materials, funding and provide laboratory facilities among other necessities for effective teaching and learning of computer in the secondary schools. This agrees with Nwokike (2015) that new technological equipment available for teaching in institutions in Enugu State were available to a low extent. It also agrees with Owenvbiugie and Ojewale (2014) who found that the extent of availability of overhead internet facilities in schools was very low. School administration ought to create environments on the school level to facilitate the teachers' integration of ICT by creating school visions and sharing goals (Ottestad, 2013). Moreover the IT infrastructure in schools is a relevant factor regarding the use of ICT for learning purposes(Lorenz et al., 2015). This shows that the secondary school administrators must endeavor to manage their funds and computer facilities in order to promote computer teaching and learning in the schools.

Conclusion and Recommendation

This study concludes that student, teachers, government and school administration have important roles to play for effective teaching and learning of computer in secondary schools. The study concludes that students need to see reasons and be enlightened on why they should learn how to use computers and appropriately use and maintain the computer facilities they have. It concludes that teachers need to understand and work on the areas of their weakness for improvement in their teaching of computer education in secondary schools. The study also concludes that school administration need to improve on their roles of making the teaching and learning effective by providing and managing funds and computers. The government need to

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understand and appreciate the benefits of computers in the society and give the needed support for computer education.

For a way forward, the study recommends that government and individuals should encourage in and out of school computer education by establishing learning centres in the State. Computer teachers should always be provided with on-the-job training or re-training programmes so that they can improve on the field. Government and school administration should as a matter of priority provide computer systems and other lacking instructional materials in their schools. Students should attend to classes and improve their interest in computer education.

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References

Ahmadi, A. A., & Lukman, A. A. (2015). Issues and Prospects of Effetive Implementation of New Secondary School Curriculum in Nigeria. *Journal of Education and Practice*, 11.

Akanbi, B., & Akanbi, C. (2012). Bridging the digital divide and the impact on poverty in Nigeria. Computing, Information Systems & Development Informatics, 3(4), 2-85.

Amiya, A. O. (2014). Integrating new technologies into office technology and management curriculum: challenges and strategies. Nigerian Journal of Business Education, 1(3), 101-114.

Aoki, H., Kim, J., & Lee, W. (2013). Propagation & level: Factors influencing in the ICT composite index at the school level. *Computers & Education, 60*(1), 310–324. doi:10.1016/j.compedu.2012.07.013

Arnseth, H.C., & Hatlevik, O.E. (2010). Challenges in aligning pedagogical practices and pupils' competencies with the Information Society's demands: The case of Norway. In S. Mukerji & P. Triphati (Eds.), Cases on technological adaptability and transnational learning: Issues and challenges. Hershey: IGI global.

David, N. (2016). Information communication technology in rural schools of Nigeria: case study Enugu state, Nigeria. Retrieved from http://ic-sd.org/wp content/uploads/sites/4/2016/06/nathan_david_paper.pdf

Ghavifekr, S., & Rosdy, W. A. W. (2015). Teaching and Learning with Technology: Effectiveness of ICT Integration in Schools. *International Journal of Research in Education and Science*, *1*(2), 175. doi:10.21890/ijres.23596

Hatlevik, O. E., Ottestad, G., & Throndsen, I. (2014). Predictors of digital competence in 7th grade: A multilevel analysis. *Journal of Computer Assisted Learning*, *Early View* (Online Version of Record published before inclusion in an issue). doi: 10.1111

Jamieson-Proctor, R., Albion, P., Finger, G., Cavanagh, R., Fitzgerald, R., Bond, T., & Grimbeek, P. (2013). Development of the TTF TPACK Survey Instrument. *Australian Educational Computing*, *27*(3),26-35.

Lorenz, R., Eickelmann, B., & Gerick, J. (2015). What Affects Students' Computer and Information Literacy around the World? – An Analysis of School and Teacher Factors in High Performing Countries, 8.

Mohsin, M., and R. Sulaiman. 2013. "A Study on e-Training Adoption for Higher Learning Institutions." International Journal of Asian Social Science 3 (9): 2006–2018.

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Nwabueze, C., Nwabueze, C., & Egbra, O. (2013). New communication technologies and microfinance banking in Nigeria: Critical role of social media. *New Media and Mass Communication*, *15*, 12-17. Retrieved from http://pakacademicsearch.com/pdf-files/art/444/12-17%20Vol%2015,%20No%201%20(2013).pdf

Nwokike, F. . (2015). (PDF) Challenges facing the Availability and Utilization of ICT resources in Post Primary Schools in Nsukka Educational Zone of Enugu State, Nigeria. Retrieved February 14, 2019, from https://www.researchgate.net/publication/281005844_Challenges_facing_the_Availability_and_Utilization_of_ICT_resources_in_Post_Primary_Schools_in_Nsukka_Educational_Zone_of_Enugu_State_Nigeria

Ogbonna O.I and Agwu A.E (2013). Availability, level of use, importance and constraints to utilization of information communication technologies by farmers in Enugu state, Nigeria. *Direct Research Journal of Agriculture and Food Science.* Vol.1 (4), pp.44-48, http://directresearchpublisher.org/drjafs

Ogbuiyi, D. C. (2015). Influence of Computer Literacy on Students in three University Libraries in South-Western, Nigeria, 6.

Olelewe, C. J., & Okwor, A. N. (2017). Lecturers' perception of interactive whiteboard for instructional delivery in tertiary institutions in Enugu State, Nigeria. *Journal of Computers in Education*, *4*(2), 171–196. doi:10.1007/s40692-017-0077-6

Ottestad, G. (2013). School leadership for ICT and teachers' use of digital tools. *Nordic Journal of Digital Literacy*,*8*, 107–125.

Phiri, A. C., T. Foko, and N. Mahwai. 2014. "Evaluation of a Pilot Project on Information and Communication Technology for Rural Education Development: A Cofimvaba Case Study on the Educational Use of Tablets." International Journal of Education and Development Using Information and Communication Technology 10 (4): 60.

Tayo, O., Thompson, R., & Thompson, E. (2015). Impact of the Digital Divide on Computer Use and Internet Access on the Poor in Nigeria. *Journal of Education and Learning*, *5*(1), 1. doi:10.5539/jel.v5n1p1

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