Negative Influence of Information and Communication Technology (ICT) on Children's Learning Outcome in Public Primary Schools in Awka-South Local Government Area of Anambra state, Nigeria.

By

1. **Dr. Emmanuel Chidubem Asiegbu**
   E-mail: ec.asiegbu@unizik.edu.ng Phone: 08038683562
2. **Dr. Florence U. Akudo**
3. **Rev. Fr. Dr. Innocent C. Igbokwe**
4. **Rev. Fr Hilary O. Nwajagu**
5. **Chimauche Mary Emmasiegbu**

[1,2,3] Department of Educational Management & Policy
[4] Department of Library and Information Science
Nnamdi Azikiwe University, Awka.
Anambra State, Nigeria.

Abstract

This study focused on the negative influence of information and communication technology on child education in Awka South Local Government Area of Anambra state. Four specific purposes and four research questions were posed for the study. The study adopted a descriptive research design. Population of the study consist of 520 school teachers and headmistresses in the 18 public primary schools in Awka South Local Government Area. The study utilized disproportionate stratified sampling technique to select 230 respondents (10 headmistresses and 220 teachers). A 16-itemed structured questionnaire was used for data collection. The instrument was subjected to face and content validation by three (3) experts while a reliability coefficient value of 0.82 was obtained which indicates a high reliability index. 230 copies of the questionnaire were distributed while 212 retrieved, which yielded 92% return rate. The research questions were answered using mean. The decision rule was analyzed with mean score above 2.50 regarded as agreed, while any mean score below 2.50 was regarded as disagreed. The findings of the study showed that computer addiction is one of the most influential negative effects of information and communication technology on child education with the responses exceeding the stated benchmark. The study concluded that information and communication technology usage if not properly supervised, can be detrimental to child education. The study therefore recommended that parents and teachers should

supervise their wards usage of information and communication technology devices in order to effectively checkmate its negative effects.

Keywords: Negative Influence, Information and Communication Technology, Children's Learning Outcome

Introduction

Information and communication technology (ICT) is one of the most important driving forces promoting education on a global scale. During the last two decades, several countries have invested heavily in Information and communication technology. Indeed, the use of Information and communication technology in education and training has been a key priority in Nigeria's education in the last decade, although progress has been uneven. Information and communication technology has had a major impact on the education sector, on organization, teaching and learning methods. Yet there are considerably different Information and Communication Technology expenditure levels between institutions within the country. Some schools have embedded Information and Communication Technology into the curriculum, and demonstrate high levels of effective and appropriate Information and Communication Technology use to support teaching and learning across a wide range of subject areas. However, some other schools are in the early phase of adopting information and communication technology, characterized by important enhancements of the learning process, some developments of e-learning (information and communication technology-enabled learning), but without any profound improvements in learning and teaching (Anderson et al., 2003). One puzzling question concerns the effective impact of these technologies on educational outputs and outcomes.

Information and communication technology can be defined as computer based tools and techniques for gathering and using information. It encompasses the hardware and software, the network and several other devices (video, audio, photographic camera, etc) that can convert information, images, and sound into common digital form. It includes electronic information in processing technologies such as computer and internet, as well as fixed-line telecommunication networks, information and communication technology is an eclectic application of computing, communication, telecommunication and satellite technology (Alaba, 2011). The information accessed through digital technologies can promote innovation, increase productivity and enrich the quality of lives. Information and communication technology in education is a broad, deep and rapidly growing field of study (Fried, 2008). Information and communication technology utilizes a broad range of technologies that are applied in the process of collecting, storing, editing, retrieving and transfer of information in various forms.

Information and communication technology has increasingly played a critical role in all fields of human endeavours. It is being used globally to translate ideas into realizable goals and develop same into

concrete achievement. Information and communication technology is readily useful in the areas of agriculture, engineering, medicine, law, architecture, aviation, commerce, insurance, banking and finance as well as maritime activities. Information and communication technology has the potential to contribute to substantial improvements in the educational system (Fried, 2008). However, to date, relatively little of this potential has been achieved in spite of information and communication technology having significant impact on traditional school system. They have provided innovation for teaching and learning, have engendered advances in research about how people learn, thereby bringing about rethinking the structure of education (Siraj-Blatchford & Siraj-Blatchford, 2003).

The standard of education is grossly measured by the performance or learning outcome of its students. According to Asiegbu (2015), students' learning outcome, which is also called academic achievement is the outcome of educational, the extent to which students, has achieved their educational goals. It is commonly measured by examination or continuous assessment but there is no general agreement on how it is best tested or which aspect are most important. Students' learning outcome refers to what the student has learned on what skills, assessments like standardized tests, performance assessments and portfolio assessments (Smith et al, 2009). It is also widely acknowledged that information and communication technology can be used to improve the quality of teaching and learning in the school system (Clarke, 2006).

The prevalence and rapid development of information and communication technology have transformed human society into the knowledge age (Caron, 2004). In fact, information and communication technology is becoming a natural part of man's daily life. Thus its use in education is becoming a necessity. Moreover, the pace of change of information and communication technology field currently exceeds the pace of progress of making effective use of information and communication technology in education. There is a lot of transformation through information and communication technology. There is an international consensus on the importance of intellectual input in creating value, underlining the need for investment in education and skills in general with a special focus on information and communication technology skills and research development, information and communication technology has changed the face of modem researches, requiring research organizations to be linked to each other through advanced network that is connected to the rest of the world.

Information and communication technology provides resources and services to support the education, research and public services missions to universities, information and communication technology also enhances the development and implementation of policies and procedures necessary to ensure the effective, secured and appropriate use of universities information resources and services. Information

and communication technology provides a lot of services for students including distance education programmes, printing, cell phone plans, internet connection, tree dial-up, technology equipment, rentals classroom, media stations, etc. Lecturers and students get relevant materials needed through the Internet. Such quality materials are used in equipping the students and upgrading their knowledge in their field of study.

Fried (2008) stated that information and communication technology brings some very powerful aids to translating theory into practice. Two of these aids are computer-assisted learning and distance education. These days, computers with Internet connectivity have become common household items. Students often have access to: educational resources, designed specifically to provide instruction to help the user learn; communication tools and reference materials including e-mail, web, encyclopedia, books, and other reference materials; entertainment, that is, games that are not designed to be educational; tools such as word processor, graphics software, e.t.c. Cellular phones, household computer games and toys, television, CD players and recorders, video tape players and recorders, are now commonplace. When students grow up in an information and communication technology environment, they may gain many hours of experience using information and communication technology facilities. Information and communication technology is an example of a technology that is a powerful change agent.

It is evident that information and communication technology incorporates and extends some of the power of reading, writing and arithmetic. It facilitates the automation of many mental activities. Information and communication technology has proven to be a valuable aid to solve problems and accomplishing task in education, business, industry, science and many other human endeavours.

Other ways in which information and communication technology can be used in education as stated by Kuznekoff & Titsworth (2013) include: Supporting conventional classroom work; the teacher could ask his/her students to use information and communication technology approach. Helping in the design and development of learning materials. A lot of materials can be downloaded from the Internet. Such materials must however be adapted to suit the specific instructional objectives. Accessing electronic teaching materials such as books, journals. These can be accessed, stored and analyzed by the use of information and communication technology. Accessing virtual library "stocks" electronic versions of books' journals. Giving or providing access to the world of resources especially in electronic form. Playing a key role in educational administration. Students' data, personnel administration, purchasing and supplies, advertisement, etc can be handled with ease using information and communication technology. Facilitating independent study and individual instruction especially on the open distance-

learning programme. Making learning more vivid and engaging. Assisting the teacher in assessment and testing. Bringing a permanent solution to brain drain problems as we now live in a global village.

Despite the aforementioned advantages or positives, several studies have stated that the use of information and communication technology can exert a negative influence on child education. This includes digital distraction, excessive influx of information which can be too much for a child, emphasis on visuals to the detriment of the core subject matter amongst others. Many argue that parents should limit the time children use computers. A growing problem among children these days is the problem of computer and Information and communication technology. Due to the influx of online gaming sites and programs, many children spend a lot of time playing these games whether it is a multiplayer, role-playing, action or pet-caring games. Coupled with online and PC games gaining popularity, more and more children are spending hours doing nothing but sitting in front of the computer playing computer games. Excessive use can lead to less time spent on reading, doing homework and other academic activities.

Another issue is information overload, information and communication technology traditionally provides the user with more information than he or she needs per time. While adults can easily navigate through these massive information database, picking what they want while discarding the others, for children it can be a big problem. The information provided can be overwhelming for them thereby leading more confusion instead of learning.

Furthermore, information and communication technology resources used in education lays more on visuals. Although this is a good thing, however it can hinder children from gaining the prerequisite theoretical foundation for understanding certain concepts and this can be detrimental to the education of a child. This study is therefore aimed at examining the negative influence of Information and communication technology on child education in Awka South Local Government Area of Anambra state.

Purpose of the Study

The broad purpose of this study is to examine the negative influence of Information and communication technology on child education in Awka South Local Government Area. The specific purposes of the study are;

1. To determine how computer addiction, affect child education in Awka South.
2. To evaluate how information overload influence child education in Awka South.
3. To assess the influence of excessive emphasis on visuals on child education in Awka South.

4.   To develop measures for checkmating the negative influence of Information and communication technology on child education in Awka South.

Scope of the Study

This study aims at examining the negative influence of Information and communication technology on child education. While this research subject has national relevance, it is however limited to Awka South Local Government Area of Anambra state.

Research Questions

1.   How does computer addiction influence child education in Awka South Local Government Area?

2.   How does information overload affect child education in Awka South Local Government Area?

3.   To what extent does excessive emphasis on visual affect child education in Awka South Local Government Area?

4.   What measures can be developed for checkmating the negative influence of Information and communication technology on child education in Awka South Local Government Area?

Method

This study which was carried out in Awka South Local Government Area of Anambra State, adopted a descriptive research design. Population of the study consist of five hundred and twenty (520) school teachers and headmistresses in the 18 public primary schools in Awka South Local Government Area. Two hundred and thirty (230) respondents were used as sample for the study. The study utilized disproportionate stratified sampling technique to select ten (10) headmistresses and two hundred and twenty (220) teachers. A 16-itemed structured questionnaire titled "the negative effect of information and communication technology on child education" developed by the researchers was used for data collection. The instrument was subjected to face and content validation by three (3) experts and later to reliability testing. A coefficient value of 0.82 was obtained which indicates a high reliability index. 230 copies of the questionnaire were distributed to the respondents by the researcher using direct delivery technique (DDT), which yielded 92% return rate. The research questions were answered using arithmetic

mean. The decision rule was analyzed with mean score above 2.50 regarded as agreed, while any mean score below 2.50 was regarded as disagreed.

Results

Research Question 1: What are the effects of computer addiction on child education in Awka South Local Government Area?

Table 1. Mean scores of the effects of computer addiction on child education

S/N	Statement	Mean	Remarks
1.	Due to computer addiction, children spend more time using computers that should have been used for reading	3.3	Accepted
2.	Computer addiction especially with games prevent children from doing their homework	3.1	Accepted
3.	The mere prospect of using computers after school can distract some children during class lessons	2.9	Accepted
4.	Computer addiction positions children to live in a virtual world, gradually losing touch with reality which can be detrimental to their education	2.7	Accepted

The table above shows the statistical presentation of the response from the respondents concerning the effect of computer addiction on child education in Awka South Local Government Area. The table has a grand mean of 3.0 which shows that the responses were accepted since it is above the benchmark of 2.5.

Research Question 2: How does information overload affect child education in Awka South Local Government Area?

Table 2. Mean scores on how information overload affect child education

S/N	Statement	Mean	Remarks
5.	Information overload makes learning a cumbersome affair for children	2.8	Accepted
6.	It discourages children from learning with the belief that knowledge acquisition is difficult	3.0	Accepted
7.	It can be a distraction to focused learning which is very important	2.6	Accepted
8.	Information overload can lead to the discovery of varying viewpoints about the same subject which can be confusing to pupils	2.9	Accepted

The table above shows the statistical presentation of the response from the respondents concerning the effect of information overload on child education in Awka South Local Government Area. The table has a grand mean of 2.8 which shows that the responses were accepted since it is above the benchmark of 2.5.

Research Question 3: What is the effect of excessive emphasis on visuals on child education in Awka South Local Government Area?

Table 3. Mean scores on the effect of excessive emphasis on visuals on child education

S/N	Statement	Mean	Remarks
9.	Excessive emphasis on information and communication technology based visuals in education can disconnect children from learning the basic theoretical essentials of their core subjects	3.1	Accepted
10.	It can oversimplify children education creating the impression that hardwork is unnecessary	3.3	Accepted
11.	It can easily divert the attention of teachers and pupils, leading to the learning of unnecessary stuff	2.7	Accepted
12.	It can be a distraction to actual learning for children	2.6	Accepted

The table above shows the statistical presentation of the response from the respondents concerning the effect of excessive emphasis on visuals on child education in Awka South Local Government Area. The table has a grand mean of 2.9 which shows that the responses were accepted since it is above the benchmark of 2.5.

Research Question 4: What measures can be employed in checkmating the negative influence of information and communication technology on child education in Awka South Local Government Area?

Table 4. Mean score on measures to be employed in checkmating the negative influence of ICT on child education

S/N	Statement	Mean	Remarks
13.	Teachers and parents should limit their pupils or children usage of information and communication technology devices	2.9	Accepted
14.	Teachers and parents should make only academic based services available to children's use on computers	3.2	Accepted
15.	The government should motivate technology companies to customize specific information and communication technology service offerings to meet the educational needs of children	2.8	Accepted
16.	Parents should supervise their children use of computers and other digital devices to mitigate their access to harmful online contents	2.5	Accepted

The table above shows the statistical presentation of the response from the respondents on the measures for checkmating the negative influence of information and communication technology on child education in Awka South Local Government Area. The table has a grand mean of 2.8 which shows that the responses were accepted since it is above the benchmark of 2.5.

Discussion of Findings

The study focused on the negative effect of information and communication technology on child education in Awka South Local Government Area of Anambra state. After the empirical data analysis, several observations were made, as presented in-line with each purpose of study.

The first purpose of the study was to determine the effect of computer addiction on child education. The findings of the study showed that computer addiction is one of the most prominent negative effects of information and communication technology among children. This is in line with the views of Duncan, Hoekstra & Wilcox (2012) that computer addiction is one of the pervasive negative effects of the information age. According to him, children early use of information and communication technology can lead to an excessive attachment to devices which hamper their overall development.

The second purpose focused on the effect of information overload on child education. The findings of the study showed that information overload can lead to several negative consequences like: making learning cumbersome to children, creating a distraction to focused learning amongst others. The United Nations Education, Social and Cultural Organization (UNESCO, 2017) emphasized that while the use of information and communication technology should be encouraged in schools, the teachers should implement measures to avoid overloading the children with information which can have negative effects on their mental development.

The third purpose of the study focused on the effect of excessive emphasis on visuals on child education. The findings of the study showed that excessive use of visuals can make the theoretical aspect of learning to become boring and challenging for pupils, oversimplify academic work creating the impression that hard work is unnecessary. It can also be a distraction to actual learning.

The fourth purpose focused on the measures that can be employed in checkmating the negative influence of information and communication technology on child education. The findings of the study showed that some of the measures include teachers and parents working together to limit the children use of information and communication technology devices. Focus on making only academic based services available to children's use and the customization of information and communication technology devices designated for children use.

Conclusion

It is important that the stakeholders of the Nigeria education system such as teachers, parents, governments and policy makers monitor and provide policies that would help the mitigation of the negative uses of ICT among children in Nigeria. This would help them to enjoy the benefit that ICT brings such as personal, society and national development.

The need for stakeholders' involvement in monitoring and providing policies to reduce the negative effects of ICT among children is justified by the results of this study. The study therefore concluded that information and communication technology if not properly handled can have negative effects on child education.

Recommendations

To this end, the study recommends that the following:

1. It is important that policy to address the negative effects of ICT among users such as children is established in Nigeria ensuring a high level of compliance to the policy by educational bodies, policy makers, government at all levels in the nation.

2. Also, teachers should be involved in the monitoring of the use of ICT among the children in schools. This could involve the restriction of ICT use in classrooms, examination halls, among others, with a great penalty attached to the breaking or such law and orders.

3. School Wifi in secondary schools should not be turned on and if they are turned on, teachers should be given passwords that would restrict children access to such school internet services.

4. Parents should endeavour to/and should be advised to monitor the ICT usage style and pattern of their wards and children, to make sure that wrong and negative uses of ICT are mitigated.

5. Also, various trainings and workshops should be conducted for teachers to train them on how they can use ICT to make class interesting and give the children class works and assignments which would make them busy. This would at least curtail the negative effects of ICT among children, enhancing the benefits that ICT could bring to development- this time personal, educational and national development. This could be done by the school or government, or even any Non-government organizations with interest towards enhancing the positive use of ICT in schools, especially in developing countries. Also, it is expedient to train teachers on how they can control and manage the children in classrooms in this ICT generation to ensure effective performance.

REFERENCES

Alaba S.O. (2011), Mobile Phone Adoption, Its Influence on Social Behavior, Schooling and Academic Work of Adolescent Students in Osun State, *Nigeria, Malaysian Journal of Educational Technology,* 11(1), pp. 35-43.

Anderson, R. J., Anderson, R., Vandegrift, T., Wolfman, S., and Yasuhara, K., (2003). Promoting interaction in large classes with computer-mediated feedback.

Asiegbu, E.C (2015) Study habits and academic performance of secondary school students in Awka south local government area of Anambra State. *National Journal of Educational Leadership (NJOEL), NAEAP, Anambra Chapter. 148-157*

Caron, P., & Gely, R., (2004). Taking back the law school classroom: Using technology to foster active student learning. *Journal of Legal Education, 54, pp.* 551-569.

Clarke A. (2006). Young Children and ICTs – current issues in the provision of ICT technologies and services for young children.

Duncan D.G., Hoekstra A.R. and Wilcox B.R. (2012), Digital Devices, Distraction, and Student Performance: Does In-Class Cell Phone Use Reduce Learning? Astronomy Education Review.

Fried, C. B. (2008). In-class laptop uses and its effects on student learning. *Computers & Education, 50*, 906-914.

Kuznekoff J.H. and Titsworth S. (2013). The Impact of Mobile Phone Usage on Student Learning, Communication Education, 62:3, 233-252.

Siraj-Blatchford I. and Siraj-Blatchford J. (2003) *More than computers - information and communication technology in the early years,* British Association for Early Childhood Education (Early Education), London.

Smith, M. K., Wood, W. B., Adams, W. K., Wieman, C. K., Knight, J. K., Guild, N., and Su, T. T. (2009). "Why Peer Discussion Improves Student Performance on In-Class Concept Questions," Science, 323, 122.