**The Pre-Secondary School Pupils’ Computer Literacy**

 **Level As A Correlates Of Their Academic Performance**

 **(A Case Study In Odeda Local Government Area Of Ogun State)**

**RAHAMON, S. O1. & TIJANI, R. A.2**

*Department of Computer Science*

*Federal College of Education,*

*Abeokuta*

*1rahamontosho@yahoo.com &2 ratijani@fce-abeokuta.edu.ng*

**Abstract**

*This study investigated the effects of computer literacy level on pre-secondary school pupils’ academic performance; A case study in Odeda Local government Area of Ogun state. The population for this study consisted of one hundred randomly selected primary school teachers from selected primary schools in Odeda local government area of Ogun State. The sampling technique used was simple random sampling techniques using questionnaire as the main instrument for the research work. The data collected were analyzed using tables and simple percentage while mean method was used to analyze the data collected. According to the findings from the study, it was revealed that computer literacy has influenced the pre-secondary school pupils’ access to technology; it also depends on the curriculum in place to teach them basic computer skills with disparities in access to technology and digital divide which affects computer literacy of pre-secondary school pupils. In addition, computer literacy greatly influences pupils’ academic performance which helps pupils understand complex concepts and practice what they have learned in traditional classroom. It has helps pupils communicate effectively which contribute to their academic performance making learning more interesting and enjoyable for the pupils. More results revealed that computer-based activities should be introduced into the curriculum regularly to ensure that schools have computer labs which encourage interactive and engaging learning experiences. The study therefore recommends that management of primary schools should provide their schools with computer facilities to improve the level of computer literacy in the country. As this will encourage even non-governmental organizations to contribute towards providing primary schools with computers, computer textbooks, and even internet services. In addition to this, government should provide training and support for educators to build their technology skills and integrate technology effectively into their teaching.*

**Keywords:** Pre-Secondary School, Computer Literacy, Pupils and Academic Performance

**Introduction**

The increased use of a computer by schools and academics alike is an important measure of technological development in an academic environment which improves the academic life of students. The use of computers is now dominant in all areas of human endeavors, especially in academic institutions. Therefore, there is a need for the acquisition of computer skills for students to operate the computer effectively (Ogbuiyi, 2015). According to Cohen (2010), computer literacy is imperative for every individual, particularly for the pupils. Reynolds (2018) defined computer literacy as being knowledgeable about hardware and software capabilities and understanding how computers and the internet can enhance students' educational experiences. It is the basic understanding of operating computers and similar technology, such as tablets and smartphones. Perhaps computer literacy may improve the knowledge and ability of students for higher academic performance. Computer literacy is the knowledge and ability to use computer and technology efficiently (Oviawe & Oshio, 2011).

Though modern children are often considered to be "digital natives," certain familial norms and socioeconomic factors can affect a child's ability to learn age-appropriate computer literacy. There are many levels of computer literacy, ranging from basic computer usage to advanced programming, and one may not realize that his child has fallen behind. To ensure one has a grasp of basic computer literacy, ensure that he is capable of the following: turning a computer on and off, using an operating system, operating software applications, using the internet, and navigating a computer using menus and search functionality (Leonard, 2019). Al-Ammary (2012), also affirmed that educational technology serves as a motivating factor for students to learn.

The European Commission included in 2007 digital skills as one of the eight types of key competencies form lifelong learning, also known as the 21st century skills. In this context, digital skills are associated with critical thinking, problem solving, as well as the creative and innovative use of a computer, besides simply mastering technical skills in computer. Also underpins the basic skills in computer, the use of computers to retrieve, access, store, produce, present and exchange information, and to communicate and participate in collaborative networks via the Internet (Figel, 2017).

Literature Review

Bawden (2018), understood Computer literacy as a set of necessary operational powers for handling a wide range of software applications, including word processors, spreadsheets, databases, etc., as well as the knowledge of some generic skills such as copying files or configuring a printer driver. Students’ ability to learning through the use of technology goes far beyond the classroom, since they use it, albeit the basic way, to support their study (Luckin, et al., 2019).

Lai (2015) and McLoughlin and Lee (2010), teachers may also influence the behavior of students concerning the use of technology outside the classroom, through other means, such as encouragement and emotional support, resource recommendations, homework involving the use of technological resources and guidance on how to use technological resources for learning. Computer literacy in education entails the use of computer knowledge and skills in the teaching and learning process more especially in the classroom situation. It involves the use of computer and its application in the transmission of knowledge or information (Jack, 2010).

Students tend to use the computer and Internet at home, to a much greater degree than in the classroom Kuhlemeier and Hemker (2017) and van Braak and Kavadias (2015). Teachers may also influence the behavior of students concerning the use of technology outside the classroom, through other means, such as encouragement and emotional support, resource recommendations, homework involving the use of technological resources and guidance on how to use technological resources for learning, Lai (2015) and McLoughlin and Lee (2010).

Yu et al. (2012), the family environment, in particular the influence of parents, has an impact on the use of computer by their children, which in turn has an impact on their studies. Parents may not have the perception of how important is the key role they play in influencing the digital skills of their children (Zhong, 2011). Wilson (2019) families are an immeasurable resource that should be used by teachers to improve the academic performance of their students. For Yu, Yuen & Park et al. (2012), one of the barriers to parental involvement in computer use at home is related to the lack of knowledge on how to engage properly with their children.

Computer literacy has impact positively to the Nigerian education system despite the challenges encountered in course of computer integration in the teaching and learning process in schools (Braide, 2015).

**Statement of the Problem**

The computer has taken the role of disseminating information, such as the press did for many years, increasing the ease with which information can be reproduced and disclosed. Thus, it is essential to hold the skills in computer literacy to benefit from the information provided by the press as well as to benefit from the information provided by the personal computer. The level of computer literacy in schools across the country is alarming as most schools do not teach the pupils computers at all. Schools that try to teach are more into theory than practical. Schools that have computers have it in limited numbers (Akem, 2014). Computer literacy is a mandatory skill for success in school, the job force, and everyday life (MathGenie, 2018).

The work therefore, seeks to find out if there is any effect of computer literacy level on pre-secondary school pupil’s academic performance using public and private primary schools in Odeda local government area of Ogun State as a case study.

**Research questions**

i. To what extent is the computer literacy among pre-secondary school pupils?

ii. How does computer literacy influences pupils’ academic performance of pre-secondary schools?

iii. What are the factors that affect computer literacy among pre-secondary school pupils?

iv. What are the ways of improving computer literacy among the pre-secondary school pupils?

**Methodology**

This research study made use of descriptive survey research design. The research design is considered most appropriate because it provides wider scope for obtaining information needed for the purpose of the study. The population consisted of all the teachers in Odeda Local Government Area of Ogun State, Nigeria. 10 Primary schools in Odeda local government Area. were randomly selected as sample for the study from which ten (10) teachers per school were selected. A total of 100 teachers were selected through the simple random sampling technique which constituted the study sample.

**The research instrument**

The instruments for the research work will be a self-constructed questionnaire. The questionnaire will made up of two (2) sections. The Section “A” part of the questionnaire consists of the respondents’ Bio-data such as Gender, Marital status, Age range and educational qualifications while the section “B” will comprise of structured items to elucidate response from which respondents will be required to pick the options of their best choice using the Renis Likert scale of 4 points. The section however, range from SA: Strongly Agreed, A: Agreed, D: Disagreed and SD: Strongly Disagreed and Very Great Extent (VGE), Great Extent (GE), Low Extent (LE) and Very Low Extent (VLE). The items on the questionnaire investigated negative and positive responses based on the subject matter. The questionnaires were personally distributed to the various respondents by the researcher. Permission was sought from the school management of the sampled schools and this afforded the opportunity of establishing a relationship with the respondents.

**Validity and Reliability of the Research Instrument**

The questionnaire constructed was tested during the pilot survey conducted with the target population but from schools not part of the drawn sample. Possible problems that were likely to be encountered during the research were noted and rectified. Reliability is regarded as the extent

to which a measurement is free from random error.

**Data Analysis**

Data collected will be analyzed using descriptive statistics of simple percentages while the mean method will be used to analyzed the research statements.

**Analysis of Respondents’ Bio data**

|  |  |  |  |
| --- | --- | --- | --- |
|  **GENDER** |  **YEARS IN SERVICE** | **COMPUTER LITERACY (%)** | **ACCESS TO Computer in the School (%)** |
| Male | Female | 0-15Yrs | 16-30Yrs | 30 & Above (Yrs.) | YES | NO | YES | NO |
| 35 (35%) | 65(65%) | 55(55%) | 30(30%) | 15 (15%) |  29 (29%) | 71 (71%) | 20 (20%) |  80 (80%) |

**Analysis of questionnaire items**

**Research question 1: To what extent is the computer literacy among pre-secondary school pupils?**

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **S/N** | **ITEMS** | **VGE (4)** | **GE****(3)** | **LE****(2)** | **VLE****(1)** | **FX** | **X=∑fx/f** | **REMARK** |
|  | To what extent has computer literacy influenced the pre-secondary school pupils’ access to technology? | 73 | 21 | 6 | - | 100 | **3.7** | **Agreed** |
| **292** | **63** | **12** | **-** | **367** |
|  | To what extent has computer literacy of pre-secondary school pupils depended on the curriculum in place to teach them basic computer skills? | 28 | 68 | 4 | - | 100 | **3.2** | **Agreed** |
| **112** | **204** | **8** | **-** | **324** |
|  | To what extent has parental support and encouragement of tech-savvy parents who have access to computers and the internet at home has impacted the computer literacy of pre-secondary school pupils? | 49 | 25 | 15 | 11 | 100 | **3.1** | **Agreed** |
| **196** | **75** | **30** | **11** | **312** |
|  | To what extent have disparities in access to technology and digital divide affects computer literacy of pre-secondary school pupils? | 41 | 47 | 11 | 1 | 100 | **3.3** | **Agreed** |
| **164** | **141** | **22** | **1** | **328** |
|  | To what extent have computer literacy of the older pre-secondary school pupils aid their exposure and experience compared to younger ones? | 49 | 39 | 12 | - | 100 | **3.4** | **Agreed** |
| **196** | **117** | **24** | **-** | **337** |

**N= 100, Decision Rule=2.50 Weighted Mean= 3.34**

The table above shows the mean rating of the respondents based on the extent of computer literacy among pre-secondary school pupils. The respondents agreed with a mean score of 3.34 indicating that computer literacy has influenced the pre-secondary school pupils’ access to technology; it also depends on the curriculum in place to teach them basic computer skills with disparities in access to technology and digital divide which affects computer literacy of pre-secondary school pupils. As corroborated by Akem, (2014), he attests that computer literacy plays a crucial role in shaping the access to technology for pre-secondary school pupils. The level of computer literacy among these pupils is often influenced by various factors, including the availability of technology resources, the quality of education, and the curriculum in place to teach them basic computer skills.

**Research question 2: How does computer literacy influence pupils’ academic performance pre-secondary school?**

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **S/N** | **ITEMS** | **SA (4)** | **A (3)** | **D (2)** | **SD (1)** | **FX** | **X=∑fx/f** | **REMARK** |
|  | It enhances pupils’ ability to find and organize information | 54 | 42 | 3 | 1 | 100 | **3.5** | **Agreed** |
| **216** | **126** | **6** | **1** | **349** |
|  | It helps pupils understand complex concepts and practice what they have learned in traditional classroom | 34 | 46 | 18 | 2 | 100 | **3.9** | **Agreed** |
| **218** | **138** | **36** | **2** | **394** |
|  | It helps pupils’ communicate effectively which contribute to their academic performance. | 52 | 36 | 12 | - | 100 | **3.4** | **Agreed** |
| **208** | **108** | **24** | **-** | **340** |
|  | It develops the pupil’s skills at young age | 40 | 32 | 28 | - | 100 | **3.2** | **Agreed** |
| **160** | **96** | **56** | **-** | **312** |  |
|  | It makes learning more interesting and enjoyable for the pupils | 45 | 29 | 15 | 11 | 100 | **3.1** | **Agreed** |
| **180** | **87** | **30** | **11** | **308** |

**N= 100, Decision Rule=2.50 Weighted Mean= 3.4**

The table above shows the mean rating of the respondents based on how computer literacy influences pupils’ academic performance pre-secondary school. The respondents agreed with a mean score of 3.4 indicating that computer literacy greatly influences pupils’ academic performance which helps pupils understand complex concepts and practice what they have learned in traditional classroom. It helps pupils’ communicate effectively which contribute to their academic performance making learning more interesting and enjoyable for the pupils.

This goes in line with Barber (2017), that computer literacy enables pupils to access a vast amount of information and educational resources online. This access allows them to supplement their classroom learning with additional materials, facilitating a deeper understanding of subjects.

**Research question 3: What are the factors that affect computer literacy among pre-secondary school pupils?**

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **S/N** | **ITEMS** | **SA (4)** | **A (3)** | **D (2)** | **SD (1)** | **FX** | **X=∑fx/f** | **REMARK** |
|  | Unavailability of computers and internet access at home or school | 64 | 24 | 12 | - | 100 | **3.5** | **Agreed** |
| **256** | **72** | **24** | **-** | **352** |
|  | The absence of computer labs or technology classes in schools | 34 | 41 | 20 | 5 | 100 | **3.0** | **Agreed** |
| **136** | **123** | **40** | **5** | **304** |
|  | Teacher's inability to integrate technology into the curriculum effectively | 62 | 26 | 12 | - | 100 | **3.5** | **Agreed** |
| **248** | **78** | **24** | **-** | **350** |
|  | Lack of parental encouragement and support for using computers and the internet | 41 | 24 | 32 | 3 | 100 | **3.0** | **Agreed** |
| **164** | **72** | **64** | **3** | **303** |
|  | Unavailability of relevant and up-to-date computer-related educational resources and materials | 49 | 25 | 22 | 4 | 100 | **3.2** | **Agreed** |
| **196** | **75** | **44** | **4** | **319** |

**N= 100, Decision Rule=2.50 Weighted Mean= 3.24**

The table above shows the mean rating of the respondents based on the factors that affect computer literacy among pre-secondary school pupils. The respondents agreed with a mean score of 3.24 indicating that there are many factors that affect computer literacy among pre-secondary school pupils such as unavailability of computers and internet access at home or school, absence of computer labs or technology classes in schools with teacher's inability to integrate technology into the curriculum effectively and lack of parental encouragement and support for using computers and the internet. This is supported by Koltay, (2011), that the unavailability of computers at home or in schools hinders students' exposure to technology. Pupils may not have the opportunity to practice and reinforce their computer skills outside of dedicated computer labs or classes.

**Research question 4: What are the ways of improving computer literacy among the pre-secondary school pupils?**

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **S/N** | **ITEMS** | **SA (4)** | **A (3)** | **D (2)** | **SD (1)** | **FX** | **X=∑fx/f** | **REMARK** |
|  | Incorporates technology and computer-based activities into the regular curriculum like the use of educational software | 70 | 20 | 10 | - | 100 | **3.6** | **Agreed** |
| **280** | **60** | **20** | **-** | **360** |
|  | Ensures that schools have computer labs or have access to individual devices like tablets | 31 | 46 | 20 | 3 | 100 | **3.1** | **Agreed** |
| **124** | **138** | **40** | **3** | **305** |
|  | Encourages interactive and engaging learning experiences by using educational games and simulations | 57 | 27 | 16 | - | 100 | **3.4** | **Agreed** |
| **228** | **81** | **32** | **-** | **341** |
|  | Encouraging parents to support their children's computer literacy at home | 42 | 22 | 30 | 6 | 100 | **3.0** | **Agreed** |
| **168** | **66** | **60** | **6** | **300** |
|  | Provision of teachers with training and resources to effectively integrate technology into their teaching | 47 | 30 | 15 | 8 | 100 | **3.2** | **Agreed** |
| **188** | **90** | **30** | **8** | **316** |

**N= 100, Decision Rule=2.50 Weighted Mean= 3.3**

The table above shows the mean rating of the respondents based on the ways of improving computer literacy among the pre-secondary school pupils. The respondents agreed with a mean score of 3.3 indicating the ways of improving computer literacy among the pre-secondary school pupils are done by incorporating technology and computer-based activities into the regular curriculum and ensure that schools have computer labs which encourage interactive and engaging learning experiences. This goes in line with Lee and Chae, (2012), that infusing technology into various subjects to make learning more interactive and engaging, computer literacy can be improved; For example, usage of educational software, online resources and multimedia presentations to teach concepts in science, mathematics, language arts, and other subjects.

**Summary of Findings**

This study investigates the effects of computer literacy level on pre-secondary school pupil’s academic performance in Odeda Local government area using one hundred respondents from ten (10) primary schools within Odeda local government area. The respondents data collected from the study population were presented on table using descriptive statistics of simple percentages while the mean method was used to analyze the data collected. According to the results, it was opined from the study that computer literacy has influenced the pre-secondary school pupils’ access to technology; it also depends on the curriculum in place to teach them basic computer skills with disparities in access to technology and digital divide which affects computer literacy of pre-secondary school pupils.

In addition, computer literacy greatly influences pupils’ academic performance which helps pupils understand complex concepts and practice what they have learned in traditional classroom. It has helps pupils’ communicate effectively which contribute to their academic performance making learning more interesting and enjoyable for the pupils. There are many factors that affect computer literacy among pre-secondary school pupils such as unavailability of computers and internet access at home or school, absence of computer labs or technology classes in schools with teacher's inability to integrate technology into the curriculum effectively.

Lastly, to improve computer literacy among the pre-secondary school pupils, computer-based activities should be improved into the curriculum regularly to ensure that schools have computer labs which encourage interactive and engaging learning experiences.

**Conclusion**

The findings of this study have shown computer literacy has influenced the pre-secondary school pupils’ access to technology. These pupils manifested a highly favorable attitude toward computer which implied their interest in learning it. However, they still felt the need to enhance their computer literacy and general computing. Thus, teachers should support them by providing intervention activities to improve their computer literacy level in the identified areas. Computer-based activities should be improved into the curriculum as well to encourage interactive and engaging learning experiences.

**Recommendations**

The study therefore recommended that;

1. Management of primary schools should provide their schools with computer facilities to improve the level of computer literacy in the country. As this will encourage even non-governmental organizations to contribute towards providing primary schools with computers, computer textbooks, and even internet services.
2. Teachers should use the knowledge of computers in the teaching and learning process instead of personal use only.
3. In-service training, seminars, workshops, and conference should be organized by the
government and professional bodies like the Teachers Registration Council of Nigeria (TRCN), Nigeria Union of Teachers (NUT), computer institutes, etc. on computer literacy programs.
4. Government, host communities, and Parent Teacher's Associations should provide the
teachers with computers and ICT centers for effective job delivery
5. Incentives should be given to teachers to enhance their knowledge in the use of computers in education through a soft loan.

**References**

Akem, J.A. (2014). *Researcher and statistics for higher education. Makurdi*: Confidence Books.

Al-Ammary J (2012). Educational technology: A way to enhance student achievement at the University of Bahrain. *Procedia Social and Behavioral Sciences*, 55(5): 248-257.

Barber, A. (2017). Net’s educational value questioned. USA Today. 4D.

Braide, H. S. (2015): The Impact of Information and Communication Technology (ICT) in
Education and Students Achievement, (*A Seminar Paper)* Presented at Ignatius Ajuru University of Education, Port Harcourt.

Bawden, D. (2018). Information and digital literacies: a review of concepts. *Journal of documentation,* 57(2):218–259.

Cohen, A. (2010). Characteristics of effective mobile learning. Retrieved from http://www.brainscape.com/blog/2010/09/characteristics-ofeffective-mobile-learning/ 32

Figel, J. (2017). Key competences for lifelong learning-European reference framework. Technical report, Luxembourg: Office for Official Publications of the European Communities.
ISTE, I. (2017). National educational technology standards for students. Technical report, *International Society for Technology in Education.*

Jack, C. G. (2010): Assessment of Computer Literacy Level in Ahoada East LGA of Rivers
State, (A B.Sc. Project) of Rivers State College of Education, Port Harcourt.

Koltay, T. (2011). The media and the literacies: media literacy, information literacy, digital literacy. *Media, Culture & Society*, 33(2):211–221.

Kuhlemeier, H. and Hemker, B. (2017). The impact of computer use at home on students’ internet skills. *Computers & Education*, 49(2):460–478.

Lai, C. (2015). Modeling teachers’ influence on learners’ self-directed use of technology for language learning outside the classroom. *Computers & Education*, 82:74–83.

Lee, S. J. and Chae, Y. G. (2012).Balancing participation and risks in children’s internet use: The role of internet literacy and parental mediation. *Cyberpsychology, Behavior, and Social Networking,* 15(5):257–262.

Leonard, K. (2019). The Advantages of Being Computer Literate in the Workforce. <https://smallbusiness.chron.com/advantages-beingcomputer-literate-workforce-27703.html>

Luckin, R., Clark, W., Graber, R., Logan, K., Mee, A., and Oliver, M. (2019). Do web 2.0 tools really open the door to learning? practices, perceptions and profiles of 11–16-year-old students. *Learning, Media and Technology*, 34(2):87–104.

MathGenie. (2018). The Danger of Computer Illiteracy in an Increasingly Digital. Worldhttps://www.mathgenie.com/blog/the-danger-ofcomputer-illiteracy-in-an-increasingly-digital-world

McLoughlin, C. and Lee, M. J. (2010). Personalized and self-regulated learning in the web 2.0 era: International exemplars of innovative pedagogy using social software. *Australasian Journal of Educational Technology,* 26(1).

Ogbuiyi (2015). Influence of Computer Literacy on Students in three University Libraries in South-Western, Nigeria. *International Research Journal of Interdisciplinary & Multidisciplinary Studies.1(1).*

Oviawe, R. Oshio, E. (2011). The impact of information and communication technologies on teaching and learning ability of education students. *Journal of L library and Information Studies*. 8(1), 191-193.

Reynolds, N. J. (2018). An Ecological Approach to ICT and Children. In: Benzie, D., Zammit, K. (eds.) IFIP WG 3.5 *International Conference - Valuing individual and shared learning:* the role of ICT. Charles University in Prague, Czech Republic.

Yu, M., Yuen, A. H. K., and Park, J. (2012). Students’ computer use at home: a study on family environment and parental influence. *Research and Practice in Technology Enhanced Learning*, 7(a):3–23.

Zhong, Z. J. (2011). From access to usage: The divide of self-reported digital skills among adolescents. *Computers & Education*, 56(3):736–746.