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TEACHERS' PERCEPTION OF DIGITAL LITERACY AS A TOOL OF TRANSFORMATION FOR TEACHING AND LEARNING IN PUBLIC SECONDARY SCHOOLS IN ANAMBRA STATE

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Abstract

Teaching creative and effective in the 21st century, the role of teacher as an organizer cannot be overemphasized. Digital literacy has blossomed in the nation with its popularity among the youth. The population of study consisted of teachers in Public Secondary Schools in Awka South Local government Area. The sample consisted of 96 respondents (Teachers), selected from 19 schools, using simple random sampling technique. Policy reliability of questionnaire was determined using Cronbach Alpha to be 0.72. Data generated from the study were analyzed using descriptive statistics and regression anaylysis. The results showed significant relationship of digital literacy resources available, effective digital literacy applicable and trained personnel on tool of transformation (Digital literacy resources yielded (r=0.441,p<0.05.), Effective digital literacy (r= 0.390, p< 0.05 and Trained personnel (r = 0.305, p< 0.05), there is joint composite of digital literacy resources available, effective digital literacy application and trained personnel as determinant of Tool of Transformation for Teaching and Learning(F(3, 92) = 7.641; p 0.05) also reveals relative contribution of digital literacy resources, effective digital literacy and trained personnel on Tool of Transformation for Teaching and Learning. Therefore, it was recommended that government, and education stakeholders should empower teachers, for effective delivery of education programmes in schools.

Keywords: Teachers' Perception, Digital Literacy, Tool Transformation, Teaching Learning

Introduction

Digitalization is the transformation of various aspects of society and economy through the use of digital technologies. It involves the use of computers, software and other digital tools to digitize and automate processes that were previously done manually or via analog technologies. This can include the digitization of communication, commerce, entertainment and education, among other areas. Digitalization has revolutionized many industries, making it easier and more efficient to connect with others, access information and carry out business transactions. It has also enabled the development of new products and services that were not possible before.

The United Nations Educational Scientific and Cultural Organization (UNESCO) have identified digitalization as a key driver of innovation in education. According to UNESCO, digital technologies can help to democratize access to education, improve the quality of teaching and learning, and enable new forms of collaboration and knowledge sharing among students and teachers (UNESCO, 2017). A study by the European Commission found that digital technologies can help to improve the efficiency of administrative processes in schools, such as students' registration, attendance tracking and grade reporting. The study also found that digitalization can help to reduce paperwork and administrative burden on teachers, allowing them to focus more on teaching and learning. In a report on digitalization in education, the World Economic Forum (WEF) noted European Commission, 2013 that digital technologies can help to personalize learning, enable real time assessment and feedback and provide students with access to a wide range of educational resources. The report also noted that digitalization can help to reduce the costs of education and improve the employability of students (WEF, 2016).

Digital literacy is the ability to use digital technologies, communication tools or networks to locate, evaluate and create information (University of Illinois, 2014). It encompasses a range of skills, knowledge and attitude that enable individuals to engage in a world increasingly dominated by digital technologies (JISC, 2014). According to UNESCO, digital literacy is the ability to access, manage, understand, integrate, communicate, evaluate, and create information safely and appropriately through digital technologies. It creates an opportunity to use digital technologies effectively for communication, collaboration and problem-solving. In recent years, the integration of digital technology in education has become increasingly important as it can enhance teaching and learning processes, improve students' engagement and prepare students for

the digital workforce. Digital literacy is seen as a key skill for the workplace, with many jobs now requiring digital competencies. A recent survey found that 82% of job openings now require some level of digital skills (Burning Glass Technology, 2019).

Technology refers to the tools, techniques and processes used to create, develop, and improve products and services. It can range from simple tools like hammer or wheel to complex systems like computers or artificial intelligence. While technology can be incredibly useful, it can also be impractical or even harmful if not used properly. For example, the overuse of technology can lead to physical and mental health problems, while the development of certain technologies can have negative environmental or social consequences (Turkle, 2011).

Digital technology refers to the use of digital systems and tools to create, process, store and share information. It encompasses a wide range of technologies such as software, hardware, networks and the internet. It has transformed the way we live, work and communicates, offering new opportunities for innovation, efficiency and convenience. The importance of digital technology has been recognized by governments, schools, businesses and individuals around the world. In developed countries, digital technology has become an integral part of everyday life, with high levels of connectivity and widespread use of digital tools and platforms. In Nigeria, digital technology offers new opportunities for economic growth and development, as well as improved access to education, healthcare and other essential services.

Nigeria is one of the largest and most populous countries in Africa, with technology playing an important role in her development. While the country faces challenges with infrastructure, funding and digital literacy, there are also many promising initiatives and opportunities in the technology sector (World Bank Group, 2020). Examples of technology being used in Nigeria include mobile banking, e-economics and e-learning platforms. In today's world, where technology is increasingly integrated into all aspects of our lives, digital literacy is becoming an essential skill for success in education and beyond. Digital literacy is important for education as it can enhance students 'engagement, provide access to a wider range of resources and help develop critical thinking and problem-solving skills (Betham & Sharpe, 2015).

Digital literacy helps students to communicate and collaborate effectively with others online. This is particularly important in remote and hybrid learning environments where students may not have access to traditional face-to-face communication methods. It also enables students

to find and evaluate information online. It is crucial that students develop the skills to navigate and filter information effectively. In addition, digital literacy helps students to develop responsible digital citizenship skills. This includes understanding issues such as online privacy, cyber bullying and digital ethics. In today's job market, digital literacy is a valuable skill that employers look for. Students who are proficient in using technology are better equipped to meet the demands of modern workplaces. Digital literacy can also help to bridge the digital divide by providing equal access to information and resources. By developing digital literacy skills, students from disadvantaged backgrounds can gain access to the same opportunities as their more affluent peers. As technology continues to advance, it is crucial that students develop the skills to navigate and use it effectively. Educators play a vital role in ensuring that students have the digital literacy skills they need to succeed in the digital age.

Teaching and learning, particularly in education, have been greatly impacted by digital literacy. Educators are increasingly using digital tools and resources to enhance student learning experiences and prepare students for the digital world. This includes using online resources, digital textbooks, interactive educational software and other digital tools in the classroom. In addition, digital literacy is essential for teachers to effectively teach and guide students in the use of digital tools and resources. Teachers need to be familiar with the latest digital tools and technologies, and be able to teach their students how to use them effectively and responsibly.

To promote digital literacy, educational institutions and organizations must provide training and resources for both teachers and students. This includes providing access to digital tools and resources, professional development opportunities for teachers, and curriculum and instructional materials that integrate digital literacy skills. Overall, digital literacy is critical for teaching and learning in today's digital age. It is important for educators to prioritize the development of digital literacy skills in their teaching practices and for educational institutions to provide the necessary resources and support for students and teachers to succeed in the digital world.

Statement of the Problem

Digital literacy in Nigeria is generally low, with only a small percentage of the population having access to the internet and the necessary skills to effectively use it. Thus, digital divide has implications for education, employment and economic development (National Bureau of Statistics, 2020). The Nigerian government has recognized the importance of digital literacy and

has implemented various initiatives aimed at increasing access to technology and digital skills. For example, the Digital Nigeria Program aims to provide digital skills training to over 25million Nigerians, while the Smart Nigeria Digital Economy Project seeks to develop a digital economy strategy for the country (Federal Ministry of Communications and Digital Economy, 2021). Despite these initiatives, there are still challenges to improving digital literacy in Nigeria, including infrastructure limitation, lack of funding and shortage of qualified trainers (World Bank Group, 2020).

Teachers' perception of digital literacy as a tool for teaching and learning is essential because their attitudes and beliefs can significantly impact the adoption and implementation of digital technology in the classroom. Teachers who have positive perceptions of digital technology are more likely to incorporate it into their teaching practices and can effectively leverage it to enhance students learning outcomes. On the other hand, teachers who lack digital literacy skills or have negative perceptions of digital technology may not be able to use it effectively, resulting in a potential negative impact on students learning. Therefore, this study will be embarked upon in order to determine awareness of Teachers' Perception of Digital Literacy as a Transformational Tool for Teaching and Learning in Public Secondary Schools in Awka South Local Government Area.

Purpose of the Study

The main purpose of this study is to investigate teachers' perception of digital literacy as a transformational tool for teaching and learning in public secondary Schools in Awka South Local Government Area. Specifically, the study sought to;

1. examine the relationship of digital literacy resources available, effective digital literacy applicable and trained personnel as determinant of tool of transformation for Teaching and Learning in Public Secondary Schools
2. determine the joint composite of digital literacy resources available, effective digital literacy application and trained personnel as determinant of Tool of Transformation for Teaching and Learning in Public Secondary Schools
3. identify the relative contribution of digital literacy resources available, effective digital literacy application and trained personnel as determinant of Tool of Transformation for Teaching and Learning in Public Secondary Schools

Hypotheses

The following hypotheses were tested at 0.05 level of significance;

Ho1: There is no significant relationship of digital literacy resources available, effective digital literacy applicable and trained personnel as determinant of tool of transformation for Teaching and Learning in Public Secondary Schools in Awka South Local Government Area Anambra State

Ho2: There is no joint composite of digital literacy resources available, effective digital literacy application and trained personnel as determinant of Tool of Transformation for Teaching and Learning in Public Secondary Schools in Awka South Local Government Area Anambra State

Ho3: There is no relative contribution of digital literacy resources available, effective digital literacy application and trained personnel as determinant of Tool of Transformation for Teaching and Learning in Public Secondary Schools in Awka South Local Government Area Anambra State

Scope of the Study

This study is limited to teachers' perception of digital literacy as a transformational tool for teaching and learning in Public Secondary Schools in Awka South Local Government Area.

Methods

Design

The research design that was adopted in this study is a descriptive survey research design of correlational factors. The descriptive survey research design is very much essential for this study because the study sought the opinion of teachers on digital literacy as a tool of transformation for teaching and learning in Public Secondary Schools in Awka South Local Government Area of Anambra State and evaluation of prevailing situations at a point in time.

Participants

The population of the study consists of all teachers in the public secondary schools in Awka South Local Government Area which comprised of both female and male teachers. Teachers were used because the research seeks their opinion and they are in a better position to analyze

and report the need and effects of digital literacy as concerns to them and the students. Simple random technique is a type of probability sampling in which the researcher randomly selects a subset of participants from a population (Natural Bureau of Statistics. 2020). The sample of the study consisted of 96 respondents, selected from the 19 secondary schools that are in Awka South Local Government. Two schools were randomly selected from each of the towns that make up Awka South except for Awka, where three schools were selected to make total of 19 schools.

Reliability and Validation of the Instrument

The reliability of a measurement depends on the degree to which it provides a stable and consistent result, whereas validity denotes the ability to measure what one intends to measure. In terms of reliability, Cronbach's alpha coefficient is the most common indicator to measure the internal consistency of the assessment tool with coefficient of 0.72. As regards validity, scholars have reported on the common types of validity in the development and validation of instruments, such as face, content, construct, and so on. The validity of the construct is guaranteed through two subsets: convergent validity and discriminant validity. The current study investigates the extent to which an instrument for measuring digital literacy is reliable and valid by determining the types of reliability and validity that researchers used to validate the instruments.

Method of Data Analysis

The data was analyzed using both descriptive and inferential statistical method and Regression Analysis. The decision rule is based on the real limit of numbers presented below

Results

This section presented the result of the study based on the hypotheses tested.

Research Hypotheses

Ho1: There is no significant relationship of digital literacy resources available, effective digital literacy applicable and trained personnel on tool of transformation for Teaching and Learning in Public Secondary Schools in Awka South Local Government Area Anambra State

Table 1: Correlation of digital literacy resources available, effective digital literacy applicable and trained personnel on determinant of tool of transformation for Teaching and Learning

Variable	1	2	3	4
Tool of transformation	1			
Digital literacy resources available (P value)	.441** .000	1		
Effective digital literacy applicable (p value)	.390** .000	.783** .000	1	
Trained personnel (p value)	.305** .000	.604** .000	.797** .000	1
Mean	**53.85**	**33.33**	**35.35**	**35.68**
Standard Deviation	**6.57**	**7.76**	**7.62**	**6.67**

The results in Table 1 show the Pearson correlation analysis. Digital literacy resources available value yielded 0.441, positively related to tool of transformation for Teaching and Learning significant with the p-value 0.000< 0.05. This shows a positive significant relationship. This implies that digital literacy resources available are positively related to tool of transformation for teaching and learning. Furthermore, the effective digital literacy applicable value is 0.390, which shows a positive relationship with tool of transformation for teaching and learning is significant with the p-value 0.000 < 0.05. The results from the table also indicated that trained personnel positively and correlated with tool of transformation for teaching and learning (r = 0.305, p value 0.000< 0.05). Hypothesis one is rejected, implies that there is significant relationship of digital literacy resources available, effective digital literacy applicable and trained personnel on tool of transformation for teaching and learning in public secondary schools in Awka South Local Government Area, Anambra State

Ho2: There is no joint composite of digital literacy resources available, effective digital literacy application and trained personnel on tool of transformation for teaching and learning in public secondary schools in Awka South Local Government Area, Anambra State.

Table .2: Summary of Multiple Regression Analysis Showing the Composite effect of the Independent Variable on the Dependent Variable

Model	Sum of Square	Df	Mean Square	F	Sig.	Remark
Regression	1160.788	3	273.135	7.641	.000	Significant
Residual	6594.712	92	35.745			
Total	7755.500	95				
R= 447						
R^2 =199						
Adjusted R^2 =173						

Table 2 shows that the independent and dependent variables have a composite relationship (R = 0.44). Consequently, the independent variables accounted for 17.3% of the total variance in Tool of Transformation for Teaching and Learning (Adjusted R2 =0.173). Furthermore, the combined effect is statistically significant (F(3, 92) = 7.641; p 0.05).Hypothesis two is rejected. Therefore, the composite influence of the independent variable, digital literacy resources available, effective digital literacy application and trained personnel as determinant of Tool of Transformation for Teaching and Learning accounted for 17.3% of the variation in the Tool of Transformation for Teaching and Learning in Public Secondary Schools in Awka South Local Government Area Anambra State.

Ho3: There is no relative contribution of digital literacy resources available, effective digital literacy application and trained personnel on Tool of Transformation for Teaching and Learning in Public Secondary Schools in Awka South Local Government Area Anambra State

Table 3: Relative contribution of the independent variables to the dependent variables (Test of significance of the regression coefficients)

Model	Unstandardized Coefficients		Standardized Coefficients	T	Sig.
	B	Std. Error	Beta		
(Constant)	67.300	3.438		19.576	.000
Digital literacy resources available	.297	.127	.798	6.337	.000
Effective digital literacy applicable	.097	.171	.427	3.567	.007
Trained personnel	.035	.152	.353	2.023	.018

Table 3 reveals there a significant relative contribution of the independent variables to the dependent variable, expressed as beta weights. The relative of peer influence on aggressive behavior. Using the standardized regression coefficient to determine the relative contributions of the independent variables. Digital literacy resources available (β =0.798, t= 6.337, $p < 0.05$) indicates most potent contributor to the prediction and has a relative contribution to Tool of Transformation for Teaching and Learning, while Effective digital literacy applicable (β = 0.427, t= 3.567, $p < 0.05$), has relative contribution to Tool of Transformation for Teaching and Learning and Trained personnel (β = 0.353, t= 2.023, $p < 0.05$) has positive and relative contribution to Tool of Transformation for Teaching and Learning Hypothesis three is rejected It implies that there was a relative contribution of digital literacy resources available, effective digital literacy application and trained personnel as determinant of Tool of Transformation for Teaching and Learning in Public Secondary Schools in Awka South Local Government Area Anambra State.

Discussion of Findings

Hypothesis one revealed there is significant relationship of digital literacy resources available, effective digital literacy applicable and trained personnel as determinant of tool of transformation for teaching and learning. This finding coincides with Bond et al., (2018) and Jackson, (2019) who observed that universities have embarked on the road to digital transformation and have

incorporated technologies in their educational, administrative, and communication processes. Advances such as educational technology platforms and electronic communications such as email and social media messaging (Sjoberg & Lilja, 2019) are used regularly in the university. Both teachers and students have access to this technologies and digital resources, which has been a catalyst for universities to reassess their traditional education models.

Results in hypothesis two stated that there is joint composite of digital literacy resources available, effective digital literacy application and trained personnel as determinant of tool of transformation for teaching and learning. This coincides with UNESCO (2015) findings which identified several problems and challenges confronting education in Nigeria to which solution are being proffered to be deficiencies in the curriculum content of education, integration of computer literacy in African and third world schools, Inadequate training for teachers in effectively utilizing digital tools ,gross inadequacies in the infrastructural facilities at all levels of education, inadequate funding, overcrowded classroom and disparities in access to technology and the internet among students from different socioeconomic backgrounds. This finding agrees with Australian Government's National Innovation and Science Agenda). Industrial bodies including the Committee for Economic Development of Australis (CEDA, 2015), Foundation doe Young Australian (FYA, 2015), and Deloitte Access Economics and Australia Computer Society (2015) highlights the need for higher education to respond to the fast-changing future employment environment. Graduates need skills related to using digital technologies creatively, effectively and independently in a digital world.

Results in hypothesis three showed that there is relative contribution of digital literacy resources available, effective digital literacy application and trained personnel on Tool of Transformation for Teaching and Learning. This goes in tandem with Johnson et al (2016) where he suggested that universities need to address this "new" competency through curriculum objectives and teacher training program It is ongoing challenge for teachers and academics to recognize the foundation on which they are guiding students to scaffold and extend digital skills, and for employees to anticipate what level of digital literacy graduates are likely to possess. This issue is exemplified by one Australian university, whose articulation of the assumed digital literacy knowledge includes an expectation that students are able to use technologies to find, use and disseminate information; access text, image and audio files on the web. Interestingly, this is referencing a graduate learning outcome rather than expected assumed knowledge (the

knowledge that students bring into their studies). Further, it is unclear what the expectation is as it is open to widely differing interpretations. This can lead to confusion and misunderstandings, particularly between students and teachers (Rokenes and Krunsvic, 2014).

Recommendations

Hence, based on the findings of this study, the following recommendations are made:

- There is need to borrow a leaf from the 21st century education of the developed world whose training and emphasis is on advance technology and digital literacy. According to Kabiru & Dairo, (2007), "no nation can be self-reliant without developing her indigenous talents and technology to a world standard" We should have a rethink on our traditional system of education with a view to making it more effective and relevant to Nigeria for self-reliance and national emancipation. Teaching in our schools should no longer be the conservative type but innovative for national development which digital education provides.
- The type of education or experience one allows him or herself to be exposed to determines to greater extent the level of his or her productivity for self- reliance in life. The way you see your self is superior to the way others see you. In fact, the ways you dress determines the way you are addressed. If people regard digital education as superior, we must begin to see ourselves as a successful entrepreneur in any field of study we find ourselves. We must begin to see beauty and success in digital literacy commonly called computer education or Information Technology (IT) even if the society does not see the usefulness of digital literacy to everyday life.
- Computer Education and digital literacy is capital intensive and needed adequate funding in order to produce the desired result. Government should ensure adequate supply of the necessary infrastructures to schools to enhance digital literacy teaching. Above all, government, NGOs and philanthropists should come together to fund digital literacy in the area of equipment and infrastructures. Budgetary allocation to education in general should be increased.
- It is not possible for anyone to teach the skill he does not possess no matter how good he may be in teaching methodology. The demand for qualified experienced and dependent personnel in computer education is very high. Most of these qualified personnel prefer to

go to industries and oil companies for greener pastures. There must be staff development programmes as suggested by Kabiru & Dairo (2007).

Conclusion

Implementing digital based instruction in our secondary schools is a requirement for the future empowerment of our population. Without digital literacy, our youth will be at a major disadvantage, both economically. If we can educate the youth population and create jobs and opportunities for them, the economic benefits will be tremendous. Likewise, if we fail to provide them with education for employment, the size of the unemployment problem will dwarf the current situation and bring tremendous hardship with it. The place of computer literacy cannot be overemphasized in our educational system and so any step that will transform its teaching to a word class global ethics must be encouraged hence, computer-based instruction in the 21st century could make a meaning. Teaching would not change if we are using the same traditional approaches that have taken it to its present state, however, necessary but adequate infrastructure like electricity, laboratories, and trained teacher; total restructuring of education; instituting supervisory agency like inspectors of education for monitoring policy implementation; adequate sensitization and advocacy of all citizen are some of the measures necessary to promote digital literacy in our schools. All hands must be on deck by Government, School Management, Teachers and Students to see that digital literacy instruction is given the adequate support and attention in our secondary schools.

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