# THE IMPACT OF COMPUTER EDUCATION ON NIGERIAN YOUTH IN REDUCING POVERTY THROUGH ENHANCING DIGITAL LITERACY

**Adeyefa Adesiyan Kolawole & Olugbenga. G. Akindoju**

Lagos State University, Ojo, Department of Science and Technology Education

**Abstract**

The purpose of this study was to examine the impact of computer education on Nigerian youth in reducing poverty through enhancing digital literacy. The study adopted a descriptive phenomenological approach. The research instrument used for this study is the questionnaire. The study's population included all students from Computer Education, Lagos State University, Ojo. Hence one hundred (100) participants were chosen from the 100 – 400 level of the Department of Computer Education. However, only 98 of the 100 questionnaires were found useful for this analysis. Hence the findings were made, that there is a significant relationship between digital literacy and the digital divide among youths in Nigeria. Also, the findings revealed that there is a significant relationship between computer education programmes and poverty alleviation among youths in Nigerians. Based on the findings of this study the paper recommends that the Federal and State Governments of Nigeria should establish a Special Fund and oversee the wise use of the monies to construct poverty alleviation skill centres in every local government in the nation. Also, to allow them to obtain the required facilities that would promote or strengthen students' digital literacy, TETFUND should urge recipient institutions to pay more attention to computer education.

**Keywords:** Digital literacy, poverty alleviation, youth, digital divide and computer education

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**Corresponding Author Email:** Princesiyandeyefa@lasu.edu.ng

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## Introduction

In Nigeria, computer education began with literacy initiatives run by the government or by private citizens or organisations. These initiatives aimed to close the digital divide and poverty alleviation by encouraging youth to learn the fundamentals of Microsoft Word and CorelDraw, including how to type, edit, and print memos, and letters, as well as design invitation and wedding cards, among other tasks (Iji & Abah, 2019; Onyam & Chukwu, 2022). For instance the National Information Technology Development Agency (NITDA) empowered 3.3 million Nigerians with several digital literacy skills. The greatest barrier to closing the digital divide, however, is the lack of digital literacy among youths. One must be digitally literate to utilise the internet effectively for information gathering and to promote internet use (Rislana, 2018; Sirlin, Epstein, Arechar & Rand, 2021). According to evidence from developing countries, digital technologies make it possible to access useful information about markets, jobs, health, education, and financial services, but their benefits depend on auxiliary investments like infrastructure and skills that make it possible to use these technologies effectively. Therefore, facilitating the efficient use of digital technology, and digital literacy through computer education may significantly contribute to the growth of economic possibilities, which will ultimately lead to human development and the eradication of poverty (Anewkwe, 2017; Rislana 2018; Ali, Raza & Qazi, 2023).

The use of computers has evolved into the lifeblood and skeleton of society by increasing productivity and efficiency across a wide range of sectors, including education, business, banking, finance, healthcare, industrial areas, legislative procedures, administrative problems, and even entertainment (Bach, Wolfson & Crowell, 2018; Abegen & Nambeh, 2019). Levy, (2021) asserted that computer education is a basic literacy to live in this era. It facilitates people to connect with the world and eases other tasks. Computer education today involves the use of computers to access social media, get knowledge from resources available, and so on (Muda, Pennycook, Pieńkosz & Bialek, 2021; Qazi *et al.,* 2021). Wide availability and rapid advancement of computer technology and increasing use of computer texts have broadened the concept of literacy and fostered the new concept of computer education. It is the ability that can use the computer independently; it amplifies the opportunities and the ability to access information using the computer or being computer literate (Sirlin *et al.,* 2021).

The digital divide is made worse by the poverty situation of Nigerians which resulted in different levels of access to the Internet and the World Wide Web, unemployment situation etc. Additionally, they come from a variety of socioeconomic backgrounds, have low English skills, have difficulty using search engines, and have subpar Internet connections (Ani, Uchendu, & Atseye, 2007 cited in Barbier, 2022). Additionally, several studies demonstrate that those with greater levels of digital literacy are more adept at identifying incorrect information online and deceptive news (Ali and Qazi 2022; Sirlin *et al.,* 2021; Muda *et al.,* 2021). Therefore, having a firm grasp of digital literacy may aid individuals in becoming more informed consumers of online content, which may subsequently have a positive impact on their conduct in social and political spheres and economic wellbeing (Rains & Tsetsi, 2017; Levy 2021). Despite the significance of digital literacy from the standpoint of

development and poverty alleviation, few validated survey tools exist to quantify it, particularly for new Internet users and regions with low literacy rates. Digital literacy is significantly influenced by age, and earlier research that aimed to define it tended to concentrate mostly on industrialised nations (Guess & Munger, 2022). However, due to the unique challenges that individuals in poor countries face while using the Internet, a greater variety of demographic characteristics (including education, gender, and socioeconomic status) are likely to be associated with digital literacy in these countries (Qazi *et al.,* 2021).
Several literature and scholarly works of various authors (Anewkwe, 2017; Abegen & Nambeh, 2019; Iji & Abah, 2019; Udaudoh, Omame & Adamu, 2019; Barbier, 2022; Okocha, 2022; Onyam & Chukwu, 2022) have tried to identify the challenges of digital literacy and digital divide by juxtaposing it with poverty mitigation, but only a few have looked at the adoption of computer education in solving the challenge of digital divide even in rural areas. Hence, in closing the gap in the literature, this paper sought to examine the effects of digital literacy in mitigating poverty among Nigerian youth through computer education.

## Purpose of the Study

The main objective of this paper is to examine the impact of computer education on Nigerian youth in reducing poverty through enhancing digital literacy. Other objectives are to:

1. examine the relationship between digital literacy and the digital divide among youths in Nigeria.
2. evaluate the relationship between computer education programmes and poverty alleviation among youths in Nigeria.

## Literature

### Concept of Digital Literacy

Digital literacy is described in a wide variety of ways. According to some academics, understanding the digital divide is a prerequisite to understanding digital literacy. This is due to the impact of ICT on every aspect of human endeavour. According to Udaudoh, Omame, and Adamu (2019), the degree of a country's sustainable development and its place among all other nations are determined by the ability to own and implement ICT in our everyday activities, which is crucial. They said that the phrase "digital gap" originated as a result of this difference. Access to information and communication technology is thus a key component of digital literacy for both people and communities. The availability of hardware, software, relevant content, and services, as well as training in the digital literacy skills necessary for efficient use of information and communication technologies, all contribute to digital literacy. It does not just involve having access to the internet (Reder, 2015 cited in Iji and Abah, 2019; Zhao, Zhang & Zhang, 2020). Digital inclusion is often defined as having access to computers and the Internet in certain geographic locations.

### Concept of Poverty

According to Encarta (2006) cited in Mebawondu *et al.* (2021), being poor is the situation of having insufficient resources or income. The absence of essential human necessities is poverty in its most severe form. Additionally, according to Akanbi and Akanbi (2012) and Bach, Wolfson, and Crowell (2018), poverty is an overall condition of inadequacy, lack, scarcity, destitution, and a lack of economic, political, and social resources. This perspective

is broader than traditional definitions of poverty and more accurately captures the issue's true dimensions. People are considered to be poor if their income and resources (material, cultural, and social) are insufficient enough to prevent them from living up to a level of living that is commonly accepted by their society (Okocha, 2022). According to Joriyesimi (2016), the global economy is extremely fragmented; nonetheless, everyone is still impacted. In the case of Nigeria, there has been increased isolation with negative effects. It is now time for everyone to get involved in reducing poverty, starting with a lower-level service like computer literacy. Iji and Abah (2019) argued that the World Social Summit declared eradicating poverty to be an ethnic, social, political, and economic imperative of humanity and urged governments to do so by addressing its root causes, ensuring that everyone has access to necessities, and making sure that the poor have access to resources such as credit, education, and training.

## Poverty and the Digital Divide

According to the United Nations Development Programme, the digital divide is "a difference in access to, distribution of, and use of information and communication technology between two or more populations" (Ali, Raza & Qazi, 2023). It was also described as "the gap between those who have access to computers and the Internet and those who do not" (Okocha, 2022, pg. 45). Only the wealthy can afford technology, especially the most advanced hardware and software, as a result of several issues, including poverty, illiteracy, and other barriers to accessing computers and the Internet. The group that stands to benefit the least from expanded access to information and communication technology is the underprivileged, who frequently assume the role of ethnic minorities (Rislana, 2018; Onyam & Chukwu, 2022). Many programmes to reduce poverty are increasingly focused on bridging the Digital Divide. Political leaders in many developing countries cling to new technology and international trade as their greatest hope for improving the standard of living of their inhabitants since they have been unable to reduce poverty in their countries (Anewkwe, 2017; Udaudoh, Omame & Adamu, 2019).

Zhao, Zhang, and Zhang (2020) identified four main categories of access barriers: Lack of "material access" relates to a lack of computer gear and network connections, while a lack of "skill access" refers to a lack of digital skills. Lack of "mental access" refers to a lack of basic digital experience. The lack of "use access" is a sign that there are few opportunities for appropriate utilisation. According to Okocha (2022), poverty is characterised by a lack of sufficient manual motor skills, other sorts of productive capacities, or ownership or gainful control over assets (physical and intangible). He pointed up several issues that are common among the underprivileged. These include illiteracy and a lack of access to proper information, among other things. Iji and Abah (2019) cite several factors contributing to poverty, including a lack of 'information and telecommunications infrastructure and a lack of necessary skills. The majority of poverty-related arguments centre on issues such as poor nutrition, inadequate housing, and so on. It has only been lately that some have begun to suggest that a lack of access to information and communication technologies (ICTs) is a contributing factor to poverty in developing countries. This position is not similar to conventional debates on poverty concerns (Abe, 2013), even though it is acknowledged that

information and communications technologies (ICTs) have the potential to play a critical role in poverty reduction initiatives (Guess & Munger, 2022; Onyam & Chukwu, 2022).

## Digital Literacy and Poverty Alleviation

One of the most promising solutions to youth poverty is the intentional and systematic acquisition of digital skills. Digital skills have become vital because all sectors are now digitalised. Digital skill offers a competitive advantage for wage employment and is very useful in creating one's own business (Sirlin *et al.,* 2021). Rislana (2018) also noted that there is a significant relationship between the use of digital technology and sustainability in business. Digital skill is the ability to use digital technology to access online contents Onyam, & Chukwu, 2022). It can also refer to skills that are required for operating digital media, computers, and cell phones (Okocha, 2022). It covers a wide range of competencies, and it includes such skills as computational thinking, app development, transcribing, content creation, editing, cognitive functioning, and digital media literacy (Muda *et al.,* 2021). It also covers skills in spreadsheet, word processing, presentation software, data mining, artificial intelligence, coding, and digital marketing. Generally, digital skills can provide decent job opportunities for unemployed youths of different gender groups. It also creates jobs without borders i.e. it enables people to work from anywhere, and with flexible working hours.

A review of extant literature provides some empirical evidence on digital skill competencies of different youth groups such as men and women, those who live in urban and rural areas, and the factors affecting the diffusion of digital skills. For instance, Joriyesimi (2016) investigated the digital competencies of student – teachers in Nigeria. The study indicated that data and word processing were the most common digital competencies among student-teachers in Nigeria. In a study by Levy (2021), it was found that most undergraduate students in Nigeria use the internet mainly to source for information relating to their course of study. Iji and Abah (2019) compared the digital literacy level of secondary school students in Nigeria, and found that male students had higher digital literacy levels than female students in web browsing, data processing, and word processing. Similarly, Anewkwe (2017) carried out a comparative study on women's perception and use of digital technologies in China and Nigeria. The finding showed that women from both countries agreed that digital technology is essential for social and economic development. Nevertheless, the majority of the women in Nigeria lacked assess to proper digital skills training. Moreover, Barbier (2022) assessed gender differences in the use of digital technologies among Nigerian students. The results indicated that male students were more proficient in the use of digital technologies than female students, males spent more time with digital technologies than females and male students used computer software more than their female counterparts.

## Impact of Computer Education on Poverty Reduction

Education is a strong source for defeating poverty as it opens the doors of tremendous opportunities and gives an individual not only a chance to change his/her fate but also of many others of his community, country and ultimately the world as a whole in the current information technology (IT) era. Computer-literate people have more skills and knowledge, which makes them capable of earning more and contributing more to the social welfare of society. Efforts to curb poverty by raising literacy rates are reinforced by the ICT with

computer education being the most proper ICT utilization channel of all the socio-economic programs (Qazi *et al.,* 2021; Guess & Munger, 2022).

ICT has emerged as a strong resource in the last couple of decades by giving new meanings to human lives, interactions and ways of doing things. It has revolutionized every sphere of human life, and education is no exception. For example, online learning resources like Khan Academy, TED talks, Academic Earth, Open Culture and online massive courses of M.I.T., Stanford and Harvard universities followed by social online networks have made online medium a strong and innovative global university. Now, a person, who is not able to attend university, can attend classes online and can update his/her skills and open new horizons of progress (Rains & Tsetsi, 2017). Online education and learning are convenient, cheaper and more effective. Although ICT is a very effective tool, the issue is how it can help the poor (Levy, 2021). According to Sirlin *et al.* (2021), the way ICT is conceptualized makes it meaningful for any developmental goal. Poverty alleviation being one of the top priority developmental goals requires special attention in this regard. According to Muda *et al.* (2021) the most effective role of ICT in development is derived through education. No work comes under the knowledge of the authors that have attempted to examine and conceptualize the ICT role in poverty eradication considering the pertinent part of education.

## Barriers to Digital Literacy and Computer Education in Nigeria

These barriers encompass the instability of government and government policies, underfunding of the education sector and infrastructural deficits resulting in a lack of electricity, low-quality internet service and inadequate vocational centres. According to the teachers, the government plays a crucial role in the adoption and integration of digital literacy in the classroom through computer education programs (Akanbi & Akanbi, 2012). In the wider Nigerian context, most schools are government-owned and thus the practices in these schools are shaped by government policies and investments. Even though Nigerian governments have admitted the importance of providing adequate funding for good education, the actual budget allocated to the Nigerian Education Ministry has remained one of the lowest (Udaudoh, Omame & Adamu, 2019; Ali & Qazi, 2022).

The Central Bank of Nigeria's data shows that between 2000 and 2010 the allocation to the Education Ministry was always less than 14% of the national budget. In 2017, there was a sharp drop to just 6% of the total national budget, the lowest since 2012. Compared to developed countries, and many developing ones, this allocation by the Nigerian government is low and remains well under the 26% recommendation by UNESCO (Anewkwe, 2017). The state governments in Nigeria model this poor funding as well. According to Rislana (2018) in 2016, 33 states of the federation allocated a combined 10.7% of their total budget to education, resulting in a nationwide strike of the Academic Staff Union of Universities calling for increased budgetary allocation to the education sector (Onyam & Chukwu, 2022).

## Diffusion of Innovation (DOI) Theory

The Diffusion of Innovations theory (Rogers 1986) can be used in research and policy debates about the Digital Divide to help people understand what the gaps mean. It also stops theorists and policymakers from making too simple conclusions about what the gaps tell us about how communication is being helped or hurt. A decade-long debate about gaps in

statistics is still going on, and communication theory can help explain why the most commonly agreed-upon gaps exist. There is a natural fit between the digital divide and the diffusion of innovations. More macro-level measures should be added, and diffusion adoption categories can give more theoretical and empirical insight into the factors that affect digital adoption and related divides.

Some people who do not believe in the digital divide say that the gaps between people who have and those who do not have access to the Internet will close in the future (Compaine 2001; Crandall 2000). Using technology such as TV, radio, and the telephone as an example, the Company says that the way the market works will eventually fill in the gaps without the help of policymakers. Roger's Diffusion of Innovations Theory (1986) is used by Company (2001) to say that technologies first become popular with people who have a lot of money. These early adopters drive down the cost for people who do not have as much money, making it easier for people who cannot afford the initial investment to get in on the action. This leads us to the conclusion that the digital divide is not a big deal. It is just a normal part of the market, and it will get better with time. Among these arguments is that one of the most important flaws is that they do not make sense because of the way the Internet works. Internet and IT are not the same as other ways of communicating, like phones and TVs, before. The telephone helps people communicate with each other, and the TV and radio help people communicate with a lot of people. The Internet, on the other hand, helps people communicate both with each other and with a lot of people (Allbritton and Rogers 1995).

Audience members can choose the information they want to see, connect with people who share their interests, debate information, and even work as activists for social change through the Internet. Another unique thing about IT is that while improvements in phones, radio, and TV are all about better quality, improvements in IT make it easier to do more complicated tasks that require a lot of advanced digital skills. People were able to share information, send messages, and store files on the Internet at any time because there was so much space. E-mail technologies opened up new ways of communicating with each other and forming groups. After the Internet, the World Wide Web and hypertext communication came out, which made it easier to connect with other people, view documents, and get information. If you had a radio or TV set, you would not need the same resources, skills and access to these new communication technologies as you would need to own a computer or a network.

Rogers (1986) says that the use of interactive communication technologies like IT systems is not the same as the use of older communication technologies like TV for several reasons. According to Rogers, the rapid changes in technology could make it more difficult to get the information you need. People who have been using the Internet are getting better at finding and processing information, and the gap between them and people who have only basic skills is likely to get bigger. Van Dijk (1999) makes this point again when he talks about usage gaps. Van Dijk (1999) says that because digital skills build on each other, people who only have basic skills now will be outpaced by people who can choose and process information better than they can now

## Methodology

The descriptive phenomenological approach was used. Phenomenological inquiry explores "how human beings make sense of experience and transform experience into consciousness, how they perceive it, describe it, feel about it, judge it, remember it, make sense of it (Patton, 2002). The research instrument that was used for this study is the questionnaire. The questionnaire was divided into two sections (A and B). Section A of the questionnaire contained the personal data of the respondent. The Section B part of the questionnaire is answered using the 4-point Likert rating scale (4 = strongly agree to 1 = strongly disagree). The study's population included all students from Computer Education, Lagos State University, Ojo. Hence one hundred (100) participants were chosen from the 100 level – 400 level of the Department of Computer Education. Hence, 25 questionnaires were administered to students at each level. However, only 98 of the 100 questionnaires were found useful for this analysis.

### Hypothesis One

***$H_o$:*** There is no significant relationship between digital literacy and the digital divide among youths in Nigeria.

**Table 1:** Correlations between the level of digital literacy and digital divide

| | | Digital illiteracy | Digital divide |
|---|---|---|---|
| Digital literacy | Pearson Correlation | 1 | .721** |
| | Sig. (2-tailed) | | .000 |
| | N | 98 | 98 |
| Digital divide | Pearson Correlation | .721** | 1 |
| | Sig. (2-tailed) | .000 | |
| | N | 98 | 98 |

**. Correlation is significant at the 0.01 level (2-tailed).

The correlation analysis showed the strength and direction of the linear relationship between digital literacy and the digital divide. From the table above, the Pearson correlation coefficient between digital literacy and the digital divide is r = 0.721**, n = 98, p = .000, indicating positive and strong correlations between digital literacy and the digital divide. Therefore, we reject the null hypothesis and accept the alternate hypothesis.

### Hypothesis Two

***$H_o$:*** There is no significant relationship between computer education programmes and poverty alleviation among youths in Nigeria.

**Table 2:** Correlations between computer education programme and poverty alleviation

| | | Computer education programme | Poverty alleviation |
|---|---|---|---|
| Computer education programme | Pearson Correlation | 1 | .840** |
| | Sig. (2-tailed) | | .000 |
| | N | 98 | 98 |
| Poverty alleviation | Pearson Correlation | .840** | 1 |
| | Sig. (2-tailed) | .000 | |
| | N | 98 | 98 |

**. Correlation is significant at the 0.01 level (2-tailed).

The correlation analysis showed the strength and direction of the linear relationship between computer education programmes and poverty alleviation. From the table above, the Pearson correlation coefficient between computer education programmes and poverty alleviation is 0.840, indicating positive and strong correlations. Therefore, we reject the null hypothesis and accept the alternate hypothesis.

## Discussion of Results

Having analyzed the questionnaires and the test of hypotheses using Pearson Correlation with the aid of Statistical Package for Social Sciences (SPSS 23.0), the following findings were made:

The first hypothesis revealed that there is a significant relationship between digital literacy and the digital divide among youths in Nigeria. This implies that the more performance appraisal practices are applied by principals, the more performance of teachers. This aligns with the findings of Bach (2018) who focused on literacy and poverty. First, they argue that the dominant literature on the digital divide misses broader connections between technological exclusion and broader forms of economic and social exclusion. Accordingly, following recent qualitative research on the digital divide, they believed that future scholarship must examine the complicated relationships between poverty, inequality, and the digital divide and they looked to poverty scholarship to understand the complicated and shifting nature of poverty. Finally, they make the case that scholars and practitioners focused on digital literacy programs should pay attention to historical and critical scholarship on education and its role in mediating poverty and fostering social mobility, as it serves digital divide and broadband adoption scholars to understand the ways education processes can either reproduce or set the stage to alter entrenched social realities.

Furthermore, the findings showed that there is a significant relationship between computer education programmes and poverty alleviation among Nigerian youths. This depicts that skill acquisition initiatives of government such as the skill acquisition centers in Lagos state are geared towards ameliorating the poverty situation of youths. The findings is also collaborated by a similar study by Mebawondu *et al.* (2021) who examined the impact of information technology on poverty alleviation in Nigeria the objective of the study was to promote digital literacy in every economic sector to alleviate poverty, i.e. promote agricultural production and practice, using computer education and ICT to boast productivity are among the enormous considerations in this paper. This research is an attempt to examine the categories, causes and effects of poverty and measures by which poverty can be alleviated using computer education and ICT. This study relied so much on secondary data. Results have shown that IT has made a great significant difference in the lives of people, and nations globally. For poverty to be alleviated proactive measures laid down by the government and private sector using computer education and ICT in the areas of economic, quality of life, political stability and provisions of infrastructures shall be enhanced. Proactive measures in the areas of education, health agriculture etc. can alleviate poverty in Nigeria using agencies such as the National IT Development Agency (NITDA) and GALAZY setup organization to curb these practices.

## Conclusion

The paper has attempted to explore the impact of computer education on Nigerian youth in reducing poverty through enhancing digital literacy. The literature review attempts to discuss the topic based on the objectives stated in the paper. It highlighted the summary of major findings and concludes that the state of digital literacy has been a major through in mitigating poverty among youths in Nigeria through the adoption of computer education especially in our tertiary institutions. Digital literacy can play an important role in expanding economic opportunities by enabling people to effectively find and consume valuable information online, yet there is a dearth of validated survey measures for capturing the digital literacy of populations with limited prior exposure to technology.

Africa and Nigeria in particular are both affected by the digital divide. Today, literacy is more broadly defined to include computer literacy in addition to the traditional definitions of reading and writing. Determining that all areas of the states are sufficiently served by telephone, internet, and broadband signals must thus proceed hand in hand with development efforts. A framework for policy like this ought to encourage development in the main economic sectors. Last but not least, there are issues with skill access, some of which are brought on by poor quality of service principally by network capacity limitations. Other factors include a lack of physical and transmission infrastructure, a lack of spectrum resources, an unstable electricity supply, a disparity in telecommunications infrastructure between urban and rural areas, a lack of long-term investment capital, a lack of skilled labour, security issues, theft, and transmission cable cuts, among others.

## Recommendations

Given the findings in this paper, the following recommendations are proffered:

- By realigning the institutional frameworks that would guarantee effective and efficient digital literacy in Nigeria, the Federal and State Governments of Nigeria should demonstrate seriousness in tackling the infrastructure issues preventing digital literacy for poverty reduction.
- To ensure that the essential infrastructures are in place to support digital literacy and poverty reduction skill centres, the Federal and State Governments of Nigeria should collaborate with the business sector. This would lessen the digital gap.
- The Federal and State Governments of Nigeria should establish a Special Fund and oversee the wise use of the monies to construct vocational skill acquisition centres in every local government in the nation to mitigate the excruciating poverty level in the country.
- To allow them to obtain the required facilities that would promote or strengthen students' digital literacy, TETFUND should urge recipient institutions to pay more attention to computer education.

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