AJSTME, Volume. 11, Issue 4. 324-330, November, 2025. https://www.ajstme.com.ng
ISSN: 2251-0141 (Print), 2971-6233 (Online)

Utilization of Digital Tools in Broadcasting Educational Contents to Adult Learners in North-West, Nigeria

Okoro, Udochukwu[1], J.C. Onuoha[2], N. D. Eneogu[2] & G. O. Ugwonna[2]
[1]Department of Geography, Federal College of Education, Okene
[2]Department of Social Science Education, University of Nigeria, Nsukka
Corresponding Author: okoro.udochukwu2392@fceokene.edu.ng

Abstract

The study examined the utilization of digital tools in broadcasting educational contents to adult learners in North-West, Nigeria. Three objectives were stated and transformed into research questions and a hypothesis to be responded to and tested respectively. Descriptive survey design was adopted for the study. 9,903 students across 28 study centers in the region constituted the entire population of the study and 345 students comprised the sample size for the study. The instrument used for data collection was a structured questionnaire titled: Digital Tools Utilization for Broadcasting Educational Contents Questionnaire (DTUBECQ) was used for data collection, designed in three (3) clusters. A reliability coefficient of 0.829 was determined. The data obtained was analyzed using Statistical Packages for Social Sciences (SPSS). Percentage was used to answer the research question for cluster A, while mean and standard deviation were used to answer the 4-point rating scale used for cluster B and C, and t-test for independent sample statistic was used to test the null hypothesis stated at 0.05 level of significance. Findings from the study revealed that to a high extent, digital radios, television, WhatsApp, and Facebook platforms are the main digital tools used for broadcasting educational contents to learners. Also, the result revealed that unreliable internet connectivity, cost of data and the inability to balance learning with family responsibilities are challenges affecting the utilization of digital tools to adult learners. Based on these findings, it was recommended that there should be presence of flexible technological infrastructure in North-West Nigeria, particularly in rural areas, Government and concerned stakeholders should implement targeted digital literacy programs for adult learners to build their confidence and skills in using IT tools for education in the region.

Keywords: Utilization, Digital tools, Broadcasting, Educational contents, Adult Learners.

Introduction

Information technology (IT) is universal that signifies not only a distinct unit of technology but a collection of technologies like telecommunications facilities, data processing facilities, semi-conductors, consumer electronics etc. The impression has come about with an amazing transformation in the information gathering, storage, preservation, and dissemination outlook of the world. Much current information is observed and recorded in electronic formats, and IT has also tremendously helped in the discharge of various duties across fields and disciplines. Remarkable development has been achieved in the society due to the rapid advancement in technology. In the recent times, with the application of internet and technology, various components of man's society have become very fast. Essentially, Information Technology (IT) improves the efforts of man's activities in minimizing manual activities.

Application of information technology (IT) is embraced to reduce costs, enhance effectiveness, and above all it is used to enhance service quality. By and large, the vital activities it does comprise collection development, reference services management, document delivery service, access to organized collections of information and to assist people in information search and retrieval (Husain &Nazim, 2015; Cholin, 2015; Malhan, 2016). Information technology is very essential in managing the large collections of related information and to facilitate services faster, easier and in reducing cost of running

different operations. In the context of this paper, the application of IT in education can equally be addressed as the inclusion of digital tools in learning.

Digital tools in education are technology-based tools that can facilitate learning and teaching in the field of education. In the secular world, they are gadgets, equipment, and facilities that enhance tasks. With the rise of digital technology, work to be done can no longer maintain a confined, one-dimensional status. In Education, tools which can transform the way teachers teach and the way students learn and interact can be employed to create engaging, interactive experiences. With these IT tools, even adult learners can play a more productive role and be at the centre of the learning process, irrespective of their location and activities at any point in time. According to Dancsa et al (2023), the use of different digital tools provides and actively engages students of any category with skills that can improve their problem-solving and critical thinking abilities. It is worthy of note that there are myriads of these tools and in most cases, they are being referred to as information and communication technology (ICT) facilities or digital tools.

In an increasingly digitized world, the integration of technology in education is becoming vital to enhance teaching and learning practices. Digitalization of educational contents play crucial roles in transforming Nigeria's educational system, enhancing learning outcomes, and preparing adult learners for the challenges of the digital age. Nigeria, like many countries, is increasingly recognizing the importance of integrating technology into education to improve teaching methods, adult learners' engagement, and overall educational quality. The dissemination of educational contents to adult learners has traditionally been constrained by the limitations of conventional teaching methods, which often cater to younger, full-time students in formal school settings. However, adult learners, particularly in regions like North-West Nigeria, face unique challenges that necessitate flexible, accessible, and culturally relevant approaches to education.

In North-West Nigeria, leveraging digital tools in education will present significant opportunities for improving educational outcomes, fostering innovation, and preparing adult learners for the demands of the 21st-century workforce. Digital tools, with their capacity to broadcast educational content through various media such as radio, television, mobile applications, and online platforms, is believed to present a promising solution to these challenges Emuakpor (2022). Olaniyonu and Gbenu (2016) presupposes that, education must be in-line with the need and aspiration of citizens and the society for sustainable development. For these aspirations to be met, the process of broadcasting educational contents must be adequately improved upon.

The utilization of digital tools for self-learning among adult learners appears to be poor Maduabuchi (2018). Basic digital tools and technologies such as the digital radio, television, mobile applications, and online platforms etc. may not be adequately utilized by adult learners in North-West, Nigeria. Even in cases where adult learners possess the required technological tools, they may not be adequately utilized to gain education knowledge needed to match up with the contemporary society. Maduabuchi (2018) posited that most adult learners lack the technological literacy to manipulate the required tools to even attempt to learn on their own certain basic concepts as broadcasted online or through other multi-media means.

Statement of the Problem

The North-West region of Nigeria, with its diverse adult learner population, faces significant challenges in accessing quality education, largely due to limitations in traditional educational delivery methods. Despite the increasing availability of Digital tools for broadcasting educational content, such as radio, television, mobile apps, and online platforms, there is a notable gap in the effective utilization of these tools to reach and engage adult learners in this region. Many adult learners in North-West Nigeria contend with barriers including limited access to technology, inadequate digital literacy, and educational programs that may not be tailored to their unique needs, learning styles, or cultural contexts.

Moreover, while IT tools offer flexible and accessible means of educational delivery, there is a lack of understanding about the extent to which these tools are currently being harnessed to support learning among adults in this region. The slow adoption or underutilization of IT tools for educational broadcasting may result in missed opportunities to enhance learning outcomes, improve digital literacy, and bridge educational disparities in North-West Nigeria. This study therefore seeks to investigate the utilization of information technology tools in broadcasting educational content to adult learners in North-West Nigeria, identifying both the challenges and opportunities that exist, with the aim of providing

insights that can inform strategies to improve educational access and outcomes for this population.

Research Purpose

The main purpose of this study is to assess the utilization of digital tools in broadcasting educational contents to adult learners in North-West, Nigeria. Specifically, the study sought to:

1. Identify the digital tools used in broadcasting educational contents to adult learners in North-West, Nigeria.
2. Examine the extent of utilization of digital tools in broadcasting educational contents to adult learners in North-West, Nigeria.
3. Identify the challenges adult learners face in utilizing digital tools for educational purposes in North-West, Nigeria.

Research Questions

The following research questions guided the study:

1. What are the digital tools used in broadcasting educational contents to adult learners in North-West, Nigeria?
2. What is the extent of utilization of digital tools in broadcasting educational contents to adult learners in North-West, Nigeria?
3. What are the challenges adult learners face in utilizing digital tools for educational purposes in North-West, Nigeria?

Hypothesis

Ho: There is no significant difference in the extent of utilization of digital tools in broadcasting educational contents between male and female adult learners.

Literature Review

Utilization is the application or the use of something. Gaur (2013) defined utilization as the action of making practical and effective use of something. Here, when the use of something or thing for a purpose has been carried out, utilization has taken place. To "utilize" means to put into use, of something for satisfaction or any other reason. Ifafesobi (2015) added that utilization is the action of using something, i.e., making practical and effective use of it. For instance, IT tools are used practically for learning, teaching, and research purpose, hence IT tools here are being utilized. So, to gain satisfaction from a resource or a service, utilization of such services or resources becomes indispensable. In relation to digital tools, utilizing digital resources is the application.

Digital tools refer to a wide range of materials, tools, and content used to convey information, ideas, and messages through various forms of media (Gourdin, 2015). These tools play a vital role in education, entertainment, communication, and information dissemination. Digital tools encompass a diverse set of materials and technologies that facilitate the creation, distribution, and consumption of content through different forms of media, which helps for productive interaction among learners (Barwick & Iles, 2017). They are designed to engage and inform audiences through visual, auditory, or interactive means. According to Valdivia (2015), digital resources can include traditional formats like print, audio, and video, as well as digital formats, such as websites, social media, and multimedia presentations. These tools serve as powerful tools for conveying knowledge, entertainment, and communication, making them essential in today's information-driven society. These digital tools can be adequately utilized by adult learners.

Adult learners are those who did not have access to formal education before attaining adulthood. They also include those who drop-out prematurely from the formal school system or those who were forced out of the formal school system for various reasons, ranging from finance or health problems. According to Orobor (2019), the adult learners have wider differences among its members, than among a class of youth about age; level of formal education; time lag since leaving school; spiritual maturity; places of birth; cultural background; occupation; position; status; prestige; and even sometimes sex. Similarly, Obidiegwu (2023), opined that, adult learner is a person who identifies a learning gap or a need to learn in his life pursuits and strives for continuing inquiry and learning, and which are necessary for mental development; freedom; and wisdom through updating his knowledge, skills; values; and attitude. These the adult learner can acquire through formal, informal, and non-formal education; and in any area of study, irrespective of age, for constant adjustment and adaptation to his/her environment.

According to Orobor (2009), adult learners who are fifteen years or thereabout, will have difficulties integrating themselves into the primary school system, considering their unsuccessful previous school experience s which may be unpleasant. They are

likely to find it difficult to adjust to the formal school environment made up of learners of younger ages. These adult learners combine literacy schooling in the evenings with regular socioeconomic activities. Due to their age and their commitment, they are bound to differ significantly from the younger people. Such differences may be in terms of emotional or psychological state or value disposition, all of which influence their learning process. If we must foster their learning, we should be conversant with the peculiar factors which influence them in the learning process. There is no doubt, that such acquaintance will help the educator or instructor to know the appropriate variables to manipulate. One of such variables is the application of digital means to enhance learning, even when the adult learner is not within the confines of the classroom.

Methodology

The study adopted the descriptive survey research design to ascertain the utilization of digital tools in broadcasting educational contents to adult learners in North-West, Nigeria. The study's population comprised 9,903 adult learners found in 28 learning centers in the region. Multi-stage sampling procedure was used for the research to collect the required samples. In the first stage, the researcher employed purposive sampling to select only three states in the region. At the second stage, the researcher used simple random sampling through balloting to draw only one study center from each state. In the third and final stage, the researcher also employed proportionate sampling technique to select the appropriate sample size from the respective study centers. After the sampling process, 345 adult learners constituted the study's sample. A structured questionnaire titled: Digital Tools Utilization for Broadcasting Educational Contents Questionnaire (DTUBECQ) was used for data collection. The questionnaire will consist of sections 'A' and 'B'. Section 'A' of the questionnaire comprised demographic information of the respondents, while section B was structured in three clusters on two- and four-point ratings, and the response options for cluster A is Available (A) and Not Available (NA). The response option for cluster B: Very High Extent (VHE)-4 points, High Extent (HE)-3 points, Moderate Extent (ME)-2 points, Low Extent (LE)-1 point and the response option for cluster C is Strongly Agree (SA)-4 points, Agree (A)-3 points, Disagree (D)-2 points, Strongly Disagree (SD)-1 point. The research instrument (DTUBECQ) was given to three experts in. They include two experts in educational technology and one expert from Measurement and Evaluation unit in the department of Science Education, all from the Faculty of Education, University of Nigeria, Nsukka. Similarly, the reliability coefficient of 0.829 was obtained. The data obtained was analyzed using Statistical Packages for Social Sciences (SPSS). Percentage was used to answer the research question for cluster A, while mean and standard deviation were used to answer the 4-point rating scale used for cluster B and C, and t-test for independent sample statistic was used to test the null hypothesis stated at 0.05 level of significance.

Results

Research Question One: What are the digital tools used in broadcasting educational contents to adult learners in North-West, Nigeria?

Table One: Percentage rating of respondents on the digital tools used in broadcasting educational contents to adult learners in North-West, Nigeria

S/N	Items	AV	NA	Remarks
1	Digital Radio	75%	25%	Available
2	Television	71%	29%	Available
3	WhatsApp Groups	77%	23%	Not Available
4	Microsoft Themes	73%	27%	Available
5	Livestreams	26%	74%	Available
6	Facebook Groups	80%	20%	Not Available
7	YouTube	30%	70%	Available
8	Google Meet	35%	65%	Available
9	Zoom	24%	76%	Not Available
10	Coursera	30%	70%	Not Available

Table 1 shows that out of 10 digital tools, only 4 (1, 2, 3, and 6) had a percentage between 71%-80%, indicating the specific digital tools used in broadcasting educational contents to adult learners in North-West, Nigeria. It was also discovered that the remaining 6 digital tools (4, 5, 7, 8 9, and 10) are not available and used for the same purpose.

Research Question two: What is the extent of utilization of digital tools in broadcasting educational contents to adult learners in North-West, Nigeria?

Table two: Mean and standard deviation of responses on the extent of utilization of digital tools in broadcasting educational contents to adult learners.

S/N	Item Summary	N	Mean	SD	Decision
1	I do learn through various Television programmes.	345	3.64	0.72	VHE
2	I interact with other learners via WhatsApp platform.	345	3.86	0.78	VHE
3	I watch YouTube videos to learn difficult mathematical tasks.	345	1.94	0.67	LE
4	I have improved my vocabulary by listening to radio broadcasts.	345	2.80	0.89	HE
5	I have used Zoom for online meetings	345	1.82	0.68	LE

From the table above, the mean scores of items 1,2 and 4 which are 3.64, 3.86 and 2.80 are above the 2.50 acceptance benchmark implying acceptance. Therefore, digital tools like WhatsApp platform, digital radio, television have helped adult learners to interact with colleagues and to improve their vocabulary. Also, the mean scores of items 3 and 5 which are 1.94 and 1.82 respectively are below the 2.50 acceptance benchmark thus implying rejection. This means that adult learners do not use the YouTube to learn arithmetic and the Zoom to attend online meetings.

Hypothesis One: There is no significant difference in the extent of utilization of digital tools in broadcasting educational contents between male and female adult learners in North-West, Nigeria.

Table Two: t-test analysis on the differences in male and female responses on utilization of digital tools in broadcasting educational contents.

Gender	Mean	N	Std. Deviation	T	Df	Sig. (2-tailed)
Female	2.70	213	0.25	1.596	48	0.117
Male	2.56	132	0.34			

The results show that the t-statistics (1.596) has a p-value of 0.117 which is greater than the 0.05 benchmark thus implying that the null hypothesis is not rejected. Therefore, there is no significant difference in male and female responses on utilization of digital tools in broadcasting educational contents to adult learners.

Research Question Three: What are the challenges adult learners face in utilizing digital tools for educational purposes in North-West, Nigeria?

Table Five: Mean and standard deviation of responses on the challenges adult learners face in utilizing digital tools for educational purposes in North-West, Nigeria

S/N	Item Summary	N	Mean	SD	Decision
1	I find it difficult to use digital tools for learning because I lack the necessary technical skills.	345	2.08	0.87	Disagree
2	Unreliable internet connectivity hinders my ability to effectively use digital tools for education.	345	2.60	0.83	Agree
3	I do receive adequate technical support when I encounter problems with digital learning tools.	345	2.44	0.86	Disagree
4	The cost of data is a significant barrier to my use of digital tools for learning.	345	3.06	0.97	Agree
5	Balancing learning with family responsibilities makes it hard for me to fully utilize digital educational tools.	345	2.56	1.12	Agree

From table 2, the mean scores of items 2, 4 and 5 which are 3.08, 2.60, 3.06 and 2.56 are above the 2.50 acceptance benchmark implying acceptance. Therefore, challenges such as unreliable internet connectivity, cost of data and the inability to balance learning with family responsibilities are visible to adult learners. Also, the mean scores of items 1 and 3 which are 2.08 and 2.44 are below the 2.50 acceptance benchmark thus implying rejection. This means that adult learners have the technical skills to effectively use digital tools for learning and that adult learners do not receive adequate technical support when they encounter problems with digital learning tools.

Discussion of Findings

The first research question examined the digital tools used in broadcasting educational contents to adult learners in North-West, Nigeria. The result revealed the specific digital tools used in broadcasting educational contents to adult learners in North-West, Nigeria as digital radios, television, WhatsApp, and Facebook platforms. This is corroborated by Emuakpor (2022) who believed that the above digital tools present a promising solution to the challenges most adult learners face in the attainment of education. The second research question evaluated the extent of utilization of digital tools in broadcasting educational contents to adult learners in North-West, Nigeria. The result revealed that, to a great extent, digital tools like WhatsApp platform, digital radio, television have helped adult learners to interact with colleagues and to improve their vocabulary. This finding is strengthened by the result of Barwick & Iles, (2017), who stated that digital tools facilitate the creation, distribution, and consumption of content through different forms of media, which helps for productive interaction among learners. The third research question observed the challenges adult learners face in utilizing digital tools for educational purposes in North-West, Nigeria. The result revealed that challenges such as unreliable internet connectivity, cost of data and the inability to balance learning with family responsibilities are visible to adult learners.

Conclusion

The utilization of digital tools in broadcasting educational contents to adult learners in North-West Nigeria holds significant promise for expanding access to education and improving learning outcomes. Despite the challenges posed by limited digital literacy, unreliable internet connectivity, and socio-economic constraints, the potential benefits of leveraging IT tools—such as flexible learning options, wider reach, and tailored content—make them an asset in adult education. This study underscores the importance of addressing the barriers to IT adoption while optimizing the design and delivery of educational content to meet the unique needs of adult learners in this region. By doing so, educational programs can more effectively empower adults, enhance their skills, and contribute to the socio-economic development of North-West Nigeria.

Recommendations

1. Government and concerned stakeholders should implement targeted digital literacy programs for adult learners to build their confidence and skills in using IT tools for education.

2. Curriculum planners should design educational content that is not only relevant to the cultural and linguistic context of North-West Nigeria (for example, using Hausa language and locally relatable examples) but also accessible across a range of devices, including low-end mobile phones.
3. Establish partnerships between government agencies, private sector entities, and international organizations to improve technological infrastructure in North-West Nigeria, particularly in rural areas.

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