



Qualitative Study on Integration of ... Adebayo, M. (2025)

Qualitative Study on Integration of Information and Communication Technology Tools for Adult Education Programmes in Nigeria: A Systematic Review

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Abstract

The paper systematically reviewed the importance of integrating information and communication technology (ICT) tools in adult education programmes in Nigeria. This was informed by the revolution in access and distribution of information brought by ICT, which makes ICT an increasingly influential factor in human interaction and educational pursuit. Therefore, the paper examined the concepts of adult education and ICT. It also discussed importance and factors affecting usage of ICT in adult education before recommendations on how to maximise benefits of ICT in adult education were made. Such recommendations include the need for the government and other stakeholders to prioritise provision of adequate funds to adult education for purchase of necessary ICT equipment needed in adult education, the need for adult education centres to employ qualified and competent facilitators who are skilful in uses of ICT and the need for adult education centres to continuously provide in-service training and workshops to facilitators in order to improve their proficiency and productivity.

Keywords: Adult education, Facilitators, ICT, Importance and Integration

Introduction

Technological advancement has revolutionised distribution and access to information, thereby making technology an increasingly influential factor in educational activities. Considering the centrality of the instructional procedures and quality of the materials used to the success of teaching and learning process, incorporation of information and communication technology (ICT) to complement and supplement adult educators' efforts in the learning process is paramount. Because of the importance of ICT to expanding access to a wide range of learning materials, Odiaka and Ajiye (2021) submit that adult educators are expected to avail themselves of the utilitarian values of ICT to facilitate effective learning that will translate to social, economic and political development. As development of every society rest on the ingenuity and creativity of the adults who are the initiators of development activities, there is need to maximise the potentials of ICT to meet the learning needs of adults in Nigeria. Achieving the learning needs of adult learners is tantamount to achieving programmes' objectives. Hence, it is important to properly harness and adequately exploit the potentials inherent in ICT to stimulate free flow of communication, exchange of ideas and cordial relationship among the learners as well as between the learners and facilitators in order to achieve the desired objectives of adult education programmes. More importantly, the multiplicity of programmes in adult education and diversities of differences among the adult learners calls for systematic integration of the conventional pedagogical procedures with modern digital technologies in the learning process (Motorga, 2023). This integration will enhance possibility of adult education in catering for the varied learning styles and needs of adults while leveraging the advantages of ICT for a more effective and engaging learning experiences. To this end, the paper explores the importance of information and communication technology (ICT) in adult education.



Qualitative Study on Integration of ... Adebayo, M. (2025)

The Adult Education Programmes in Nigeria

Adult education is a generic term covering all systematically organised educational programmes for individuals who have attained the status of adulthood, maturity and responsibilities (UNESCO, 2011). Adult education exists in different forms and each form caters for specific educational needs and conditions of varied individuals and groups. As educational programmes for people who have demonstrated manifestation of the expected behaviours normally attributed to adulthood after having satisfied the chronological criteria, adult education covers all processes through which individuals acquire knowledge, skills, attitude and other values that have positive contributions to individual and community development (Jegede, 2015).

Moreover, adult education also means the aggregate of all educational activities intentionally designed to facilitate acquisition of knowledge, skills and attitude for individuals whose age, social roles and self-perception define them as adults. This definition depicts the significance of adult education to promotion of lifelong learning opportunities. Through its varied programmes, issues in the world of work, literacy, health, and societal conflicts are managed through adult education, making it an essential tool for facilitating social, economic and political development (Adelore & Itasanmi, 2016). This informed why adult education has remained a recurrent issue in development discourse globally. This was championed, most especially, at the UNESCO 5th International Conference on Adult Education held in Hamburg, Germany, popularly called the “Hamburg Declaration” in 1997 (UNESCO, 1997 cited in NCCE & TDP, 2015). In the conference, adult education was seen as: The key to the twenty-first century; it is both a consequence of active citizenship and a condition for full participation in society. It is a powerful concept for fostering sustainable development, for promoting democracy, justice, gender equity, and scientific, social and economic development, and for building a world in which violent conflict is replaced by dialogue and a culture of peace based on justice (National Commission for Colleges of Education & Teacher Development Programme (NCCE & TDP), 2015:12).

As a vehicle for individual and community development, adult education is an inter-disciplinary and multi-disciplinary discipline, relatively planned, situational relevant and voluntary in nature to accord participants freedom to choose and participate in programmes that have bearing with their needs and aspiration. Adebayo and Uba (2025) observe that people enrolled in adult education for many reasons and the most common reasons include: to create positive change in their skills, attitude and knowledge level, to improve their technical and professional qualifications, to overcome identified inadequacies in coping with the current life problems and to improve their current social and economic status, among others. Therefore, it is important for adult facilitators to be properly trained for efficient discharge of their responsibilities towards the realisation of learners’ goals for enrolling in adult education programmes and the objectives for which a programme is organised.

Achieving objectives of adult education programme and learners’ goals for enrolling in programmes are correlated by many factors. Prominent among the factors is the use of relevant instructional materials to facilitate acquisition of learning experiences needed for preparation of adult learners for effective functioning and enhanced professional skills, knowledge, taste, attitude and a host of other benefits inherent in adult education. The relevance of the instructional materials is the ability of the materials to promote achievement of learners’ needs and programme objectives. Hence, usage of instructional materials should be based on the relevance of the materials to achievement of programme objectives, appropriateness of the materials to the learners’ socio-economic and



Qualitative Study on Integration of ... Adebayo, M. (2025)

educational background, ability of the materials to motivate and sustain learners' interest in the programme as well as availability and accessibility of the materials. Suffice to note that the behaviour of the facilitators and suitability of instructional materials may strongly influence the learning climate and learning outcome. As success of learning transaction depends, among other things, on the resourcefulness of the facilitators in designing environment that facilitates effective delivery of the instructional strategies, as well as on the ingenuity of the facilitators to continuously elicits and sustain interest of the learners in learning activities. To this end, there is need for adult educators to explore and exploit opportunities provided by the development of ICT.

Concepts of Information Communication and Technology (ICT) Tools

Advancement in information and communication technology (ICT) has revolutionised distribution and access to information. It has become an increasingly influential factor in learning and improvement of professional competence. Because access to meaningfully relevant information is central to success of any learning activity, ICT has provided unlimited access to a wide range of learning materials (Adamu, 2023). The term ICT refers to the convergence of audio-visual and telephone networks with computer networks through a single cabling or link system. This stresses the use of computers as well as necessary enterprise software, middleware, storage, and audio-visual systems to access, store, transmit, and manipulate information (Sahay, 2003 in Odiaka and Ajiye, 2021). According to 2019 National Implementation Guidelines of ICT on education in Nigeria cited in Abubakar (2023), ICT means the art and applied sciences that deal with data and information. It encompasses all equipment (including computational machinery - computers, hardware, software, firmware etc., tools, methods, practices, processes, procedures, concepts, principles and the sciences) that come into play in the conduct of the information activities: acquisition, representation, processing, presentation, security, interchange, transfer, management, organisation, storage and retrieval of data and information.

As a diverse set of technological tools and resources used to transmit, store, create, and exchange information (Saha, 2014), ICT includes radio, television, video, DVD, telephone (fixed line and mobile), satellite systems, computer and network hardware and software. Sorting Hat Technology Pvt Ltd. (2023) classifies ICT into the following four main categories:

Computing and Information Technology: Computing and information technology mainly refers to designing and building computers. It also refers to maintaining and troubleshooting the computer system. It also ensures that the computer runs smoothly.

Broadcasting: Broadcasting is the transfer of audio and video-visuals through any electronic mass communication to varied audiences all over the world. It mainly uses the electromagnetic spectrum to transfer the data.

Telecommunications: Telecommunications are the transfer of electronic information over several distances. This information may be in the form of voice, data, text, images or video.

Internet: The Internet is a global system that provides a variety of information and other communicational services by the use of interconnected networks. It uses the Internet Protocol (IP) to communicate with others.

The above classification is a reflection of the broadness of ICT's scope of coverage and importance especially in exchange of information. Leveraging on the potentials of ICT in facilitation of learning to different categories of learners has galvanised its adoption in education. Peni (2023) identifies the following as objectives of ICT in education:

1. To facilitate the teaching and learning processes.
2. To promote problem-solving, critical thinking and innovative skills.



Qualitative Study on Integration of ... Adebayo, M. (2025)

3. To promote life-long learning and advance knowledge.
4. To enhance the various teaching strategies required to meet the needs of the population.
5. To foster research and development.
6. To support effective and efficient education administration.
7. To enhance universal access to information.
8. To widen access to education and the range of instructional options and opportunities for learning.
9. To promote commercialisation of ICT in Education.
10. To develop and support technical infrastructure that maximises digital creativity, sharing and innovation.

Considering the objectives of ICT to facilitation of learning and achievement of learning objectives, it is imperative to highlight the importance of information and communication technology (ICT) in adult education. This will enable adult educators and facilitators to understand the need to integrate the use of ICT into adult education instructional delivery strategies in particular and the importance of ICT in adult education in general.

Importance of ICT in Adult Education Programmes in Nigeria

Expansion of access to learning opportunities: With the growing computer-centric lifestyle which we are currently witnessing, there is need for integration of ICT into adult education pedagogical instructional delivery. The use of ICT to complement and supplement the traditional methods of teaching will expand access to increased learning opportunities and ensure equity. As new innovations are unleashed on a daily basis to improve learning experience, adult educators must keep abreast with the development and continuously look for new opportunities to enrich the learning experiences of adult learners by integrating the use of ICT into various methods of teaching the adult learners.

Promotion of learners-centred instructional delivery: With the paradigm shift from the teacher-centred to learners-centred instructional delivery, the use of ICT will help to align adult education with the interactive learning opportunities provided by the use of ICT. This will enable the learners to become self-reliant and self-directed in acquisition and application of knowledge and skills provided by adult education programmes. For instance, adoption of software such as Interactive Geometry software, Instructional Software, Simulation, gaming and recreational software will provide rich alternative instructional experiences to the learners and help to remove fear and phobias related to study of a subject at the same time providing them opportunities to learn while playing or engaging in virtual applications of the principles and processes of a subject (Chatterjee, 2021). The adoption of ICT will thereby change the role of the facilitators from a mere knowledge-transmitter to that of learning-facilitators. This will enable the learners to become more responsible about their learning as they seek out relevant information and knowledge through their own efforts, synthesise and share their knowledge with others.

Improvement of interaction: Adoption of ICT in adult education will help create a more interactive and engaging learning environment for both the learners and facilitators in adult education. Creation and sharing of learning content with each other and access information from anywhere and anytime will not only promote improved teaching and learning activities but also makes the teaching-learning process easier. For instance, many people and organisations used different ICT-driven platforms such as Skype, Zoom, Google meet, among others, for interaction during the COVID-19 induced lockdown. Shuaibu and Ahmed, (2021) submit that the idea behind ICT-driven electronic learning is to empower learners to study without being confined to the four walls of classrooms or schools through the integration of learning with technology. Therefore, stakeholders in adult education



Qualitative Study on Integration of ... Adebayo, M. (2025)

should leverage on the opportunities provided by ICT to continuously bridge the gap of space and time in providing learning opportunities to adult learners.

Promotion of access to educational resources: The adoption of ICT in adult education will enable both learners and facilitators access wide range of educational resources available on the internet. These resources include online textbooks, e-book, videos, and educational software that can be accessed from anywhere and at any time. With increased access to educational resources, adult learners can study at their own pace and at their own time, allowing them to balance learning with other activities or responsibilities. In addition to having unlimited access to learning materials, the use of ICT will also enable adult learners and facilitators to easily prepare, organise and manage their notes in the digital format through the use of software such as Microsoft word, WordPad, PDF, etc.

Enhance effective evaluation: Evaluation is central to success of adult education programmes. Evaluation is the dynamic process of making value judgement about the merit, worth or otherwise of a part or the whole of a programme. This involves in-depth assessment of all elements involved in adult education to obtain feedback and to determine success or failure of a programme. The evaluation may be diagnostic (evaluation done to uncover causes of learning problems), formative (evaluation done before completion of a programme to provide feedback on progress) or summative evaluation (evaluation done at completion of a programme to determine extent to which the goal of a programme has been achieved). Feedback obtained from evaluation serves as a basis to decide on whether a programme should be recycled or overhauled. Through the use of ICT tools the programme objectives, learners' needs, available resources, performance of facilitators and learners, learning outcomes and other elements involved in adult education programmes can be effectively evaluated. The realisation of the objectives of ICT in Nigeria by the adult learners lies on the facilitators. The facilitators need to devise means by which the adult learners can be adequately taught and acquire knowledge and skills needed for satisfactory proficiencies in the utilisation of ICT for effective functioning in their respective endeavours. Therefore, ICT is both a tool for instruction for the facilitators and a content area of learning the knowledge of ICT. This covers using different ICT gadgets for storing, processing and retrieving information. It entails using emails and social networks to achieve various academic and social problems.

Despite the usefulness of ICT to promotion of teaching and learning, its utilisation in adult education by adult facilitators is low. This was revealed by the findings of a research conducted on knowledge and utilisation of ICT among adult literacy facilitators by Odiaka and Titus in 2021. Their findings revealed that 58% of the respondents do not know how to apply ICT knowledge and skills in facilitating the learning of their adult students, 70% of the respondents cannot apply ICT knowledge and skills for their own learning, 16% and 24% of the respondents respectively reported that they cannot switch on or shut down the computer, 76% of the respondents reported that they cannot store information on the computer with the same percentage reported that they cannot retrieve stored information on the computer, 80% of the respondents reported that they cannot utilise the electronic mail in sending and receiving information with another 80% reporting lack of knowledge of how to use social networks. This revelation is attestation to the fact that most adult educators do not understand the importance of ICT to promotion of professional competence and effective instructional delivery in adult education programmes in Nigeria. To maximise the importance of ICT to adult education programmes in Nigeria, inhibiting factors towards the use of ICT by adult educators must be identified. Such understanding is required for designing and implementation of appropriate policies to overcome challenges affecting effective utilisation of ICT in adult education programmes in Nigeria.



Qualitative Study on Integration of ... Adebayo, M. (2025)

Challenges affecting the use of ICT in adult education Programs in Nigeria

Poor funding: Utilisation of ICT in adult education programmes requires a magnum of funds, infrastructure and support facilities. Regrettably, funding of education in Nigeria is grossly poor and adult education suffers the most. While the government is unwilling to commit adequate funds to the adult education sector, donation from donor agencies are sometimes not judiciously utilised or are used for other programmes at the expense of adult education. Consequently, poor funding of adult education has resulted in non-availability of necessary ICT resources.

Inadequate qualified and competent facilitators: The quality of knowledge and skills imparted to the adult learners is systematically related to the competence of the facilitators employed for such. Facilitators as the implementers of adult education programmes have the greatest influence in arousing and sustaining the interest and attention of learners in the teaching-learning process. Disappointedly, education industry seems to be the only sector in Nigeria where workers with different specialisation are indiscriminately employed to work where they are not qualified or skilled. A trained teacher not trained as adult facilitator is not even qualified to teach adult learners due to the peculiarities of the learners, let alone those who are not trained teachers at all. Qualitative and functional adult education cannot be ensured if the bulk of facilitators in adult literacy centres in Nigeria are not trained adult facilitators and lack proficiencies in the use of ICT to equip the learners with necessary ICT knowledge and skills required in the 21st century.

High cost of ICT tools: Another important challenge to utilisation of ICT in adult education is the high cost of ICT tools. Due to poor financial allocation to adult education, it is practically impossible for most adult education centres to afford the cost of ICT tools. Consequently, the traditional face to face teaching and learning system is the saving grace for many centres.

Inadequate ICT infrastructure: ICT Infrastructure required for effective utilisation of ICT in adult education is not adequately available. Infrastructure such as hardware, software, internet access, stable electricity and similar other resources which are required to integrate the ICT technology in the teaching and learning processes are not sufficiently available.

Conclusion

To maximise the increasing benefits inherent in the integration of ICT into adult education pedagogical strategies, it is important to balance the uses of ICT with the traditional instructional delivery strategies. This will help to mitigate the potential negative challenges associated with the use of ICT. Therefore, to maximise the benefits associated with the utilisation of ICT in adult education programmes in Nigeria, the following recommendations must be systematically implemented.

Recommendations

1. The government and other stakeholders in adult education should prioritise provision of adequate funds to adult education. This will enable facilitators to purchase the necessary ICT equipment needed for proper integration and utilisation of ICT in adult education programmes in Nigeria.
2. Adult education centres should employ qualified and competent facilitators who are not only skilful in uses of ICT but who are also conversant with the adult psychology, guiding principles and methods of teaching adults in adult learning centres.
3. Adult education centres should provide regular in-service training and workshops to facilitators in order to acquaint them with new development in ICT world. This will enable the facilitators to update their knowledge, understanding, skills proficiency and productivity.



Qualitative Study on Integration of ... Adebayo, M. (2025)

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