

Harnessing Technology for 21st Century Adult Education and Socio-Economic Growth: A Panacea to Communities Empowerment in Nigeria.

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Abstract

This research examines the capacity of technology-enabled adult education in Nigeria to bring about significant changes, particularly in terms of empowering communities and fostering socio-economic progress. By utilising a range of initiatives and case studies, this text emphasises the significance of customised interventions that specifically target the distinct obstacles encountered by Nigerian communities. The study highlights the importance of digital literacy in accessing technology-based education and suggests practical solutions for stakeholders, policymakers, and practitioners to properly utilise technology. The recommendations encompass the development of comprehensive national policies, allocation of resources towards digital infrastructure and teacher education, promotion of collaborations, emphasis on digital literacy training, and creation of systems for monitoring and evaluation. Nigeria may achieve equitable socio-economic growth in the 21st century by implementing these ideas and taking a comprehensive approach to technology-enabled adult education, which will allow the country to make the most of its human resources.

Keywords: Technology, Adult Education, Socio-economic Growth, Community Empowerment

Introduction

Adult education is crucial in meeting the constantly changing needs of society and the economy in the 21st century. Contrary to conventional ideas about education that mostly

emphasised formal schooling in childhood and adolescence, adult education includes a wide range of learning opportunities designed to meet the needs and goals of adults who are no longer in the normal school age. The importance of adult education has become increasingly evident due to the rapid progress in technology and globalisation, which have significantly transformed the work and learning environment. Adult education in the present time includes a wide range of learning opportunities that meet the requirements of persons who want to improve their abilities, get new information, or work towards personal and professional growth objectives (Merriam & Brockett, 2018). This include official programmes provided by educational institutions, occupational training courses, ongoing education seminars, online learning platforms, and community-based initiatives. Adult education is distinguished by its adaptability, availability, and pertinence to the practical requirements of learners, rendering it an essential element of lifelong learning.

Adult education in the 21st century is not only crucial for personal development, but also plays a vital role in advancing society and fostering economic prosperity. As societies shift towards economies that rely on information and are driven by innovation and technology, there is an increasing need for a workforce that is competent and able to adapt (Field, 2016). Adult education acts as a catalyst for empowering individuals by equipping them with the necessary skills and talents to succeed in a continually evolving environment. Furthermore, adult education is essential for fostering social inclusion and equity since it enables persons from various backgrounds to access educational resources and actively engage in society (UNESCO, 2016). It helps to decrease inequalities in school and employment results, therefore promoting stronger social unity and adaptability.

In Nigeria, similar to several developing nations, communities encounter a multitude of socio-economic obstacles that impede their progress and welfare. The constraints frequently result from systemic problems such as poverty, unemployment, insufficient infrastructure, and restricted availability of high-quality education and healthcare (Odoemelam, 2017). An urgent and significant problem that Nigerian communities are currently grappling with is the matter of literacy and education. UNESCO reports that Nigeria has a significantly high prevalence of adult illiteracy, with around 38% of adults lacking fundamental literacy abilities (UNESCO, 2015). This presents substantial obstacles to personal empowerment and socio-economic progress, as

people who are unable to read and write are more prone to being marginalised and excluded from economic prospects.

Moreover, the swift rate of technological progress worsens pre-existing inequalities in the availability of education and opportunities for skill enhancement. In Nigeria, rural and marginalised populations frequently face a lack of dependable internet connectivity, digital devices, and technological infrastructure. As a result, they are unable to fully engage in online learning efforts and miss out on the advantages of the digital economy (Opeke, 2018). Nigerian communities confront additional difficulties due to economic instability and elevated levels of unemployment. The absence of feasible work prospects, specifically for the younger generation, contributes to poverty, social turmoil, and the movement of people to urban areas in search of means to support themselves (Owolabi & Olaopa, 2016). Moreover, there are ongoing gender inequities in terms of access to school and employment, whereby women encounter more significant obstacles in terms of their involvement in the workforce and decision-making procedures.

Adult education has great potential to alleviate the socio-economic difficulties faced by communities in Nigeria and promote inclusive development. Through the utilisation of technology and novel methodologies, persons with a vested interest can enhance the availability of high-quality education, enable individuals to acquire pertinent skills, and foster sustainable socio-economic development. However, harnessing this potential necessitates collaborative endeavours from the government, civil society, and the commercial sector to allocate resources towards educational infrastructure, foster digital literacy, and establish favourable policy frameworks.

Statement of Problem

In Nigeria, the persistent socio-economic challenges faced by communities, such as high adult illiteracy rates, poverty, and unemployment, are exacerbated by systemic issues like inadequate infrastructure and limited access to quality education. Despite the rapid advancement of technology globally, many Nigerian communities, particularly those in rural and marginalized areas, remain unable to fully benefit from technology-enabled educational opportunities. The integration of technology in adult education holds significant promise for addressing these issues, yet several barriers hinder its effective implementation.

These barriers include significant disparities in access to digital devices, reliable internet connectivity, and technological infrastructure, especially in rural areas. Limited digital literacy among adult learners affects their ability to effectively engage with and benefit from technology-based educational resources. Insufficient allocation of resources towards the development and maintenance of digital infrastructure and teacher training further impedes progress. Additionally, the lack of comprehensive national policies supporting the integration of technology in adult education and addressing the unique needs of diverse communities remains a significant hurdle. Lastly, inadequate collaboration among government agencies, non-governmental organizations (NGOs), the private sector, and local communities hinders the implementation and sustainability of technology-enabled education initiatives.

Research Objectives

The primary objectives of this research are to:

1. Evaluate the current state of adult education in Nigeria, focusing on the availability and effectiveness of technology-enabled educational initiatives.
2. Identify the key challenges that impede the successful integration of technology in adult education in Nigerian communities.
3. Analyze successful case studies and initiatives that have effectively leveraged technology to enhance adult education and socio-economic development in Nigeria.
4. Propose practical solutions and recommendations for policymakers, educators, and stakeholders to address identified challenges and enhance the impact of technology-enabled adult education.
5. Emphasize the importance of digital literacy in accessing and benefiting from technology-based education, and suggest strategies to improve digital literacy among adult learners.

Methodology

This study employs a literature-based research design, utilizing a narrative review approach to investigate the role of technology in adult education for socio-economic growth and community empowerment in Nigeria. The narrative review method was selected to comprehensively synthesize existing literature, identify trends, and provide a coherent overview

of the subject matter. This approach allows for an in-depth exploration of diverse sources and perspectives, offering a rich understanding of the issues and potential solutions.

The data for this study was collected from a wide range of academic sources, including peer-reviewed journals, books, government reports, and publications from non-governmental organizations (NGOs) and international agencies. Relevant literature was identified through systematic searches in academic databases such as JSTOR, PubMed, Google Scholar, and institutional repositories. Keywords used in the search included "technology in adult education," "digital literacy," "community empowerment," "socio-economic growth," and "Nigeria."

Inclusion and Exclusion Criteria

To ensure the relevance and quality of the literature, the following inclusion criteria were applied:

1. Studies published in English.
2. Research focusing on technology-enabled adult education in Nigeria or similar developing countries.
3. Articles published within the last 15 years to ensure the inclusion of recent advancements and trends.
4. Sources that discuss the socio-economic impacts of adult education and digital literacy.

Exclusion criteria included:

1. Articles not available in full text.
2. Studies focusing solely on formal education for children and adolescents.
3. Literature not providing empirical evidence or substantial theoretical insights related to the research questions.

The selected literature was reviewed and analyzed to identify key themes, trends, and gaps in the research. The analysis focused on:

1. The impact of technology on adult education in Nigeria.

2. Barriers to the effective implementation of technology-enabled education.
3. Successful initiatives and case studies showcasing the use of technology in adult education.
4. Recommendations for stakeholders, including policymakers, educators, and community leaders.

The findings from the literature were synthesized to provide a comprehensive narrative on the role of technology in adult education for community empowerment and socio-economic growth in Nigeria. This synthesis involved summarizing the main points from each source, identifying patterns and discrepancies, and drawing connections between different studies to present an integrated view of the current state of knowledge.

As a literature-based study, ethical considerations primarily involved ensuring the accurate representation of original sources and giving proper credit to the authors of the reviewed works. All referenced materials were appropriately cited to maintain academic integrity and respect intellectual property rights.

Result (Literature Review)

The Role of Technology in Adult Education

The advent of technology has completely transformed the adult learning landscape, granting individuals unparalleled access to a vast array of resources and educational prospects. Online platforms, such as Massive Open Online Courses (MOOCs) and learning management systems, have made education more accessible by eliminating constraints related to time and location. Individuals have the ability to retrieve educational resources at any given time and location, enabling them to create adaptable learning timetables that can fit their professional and personal obligations (Johnson et al., 2019). Moreover, technology enables customised learning experiences, specifically tailored to accommodate the varied demands and learning preferences of adult learners (Woltering et al., 2019). Adaptive learning systems utilise data analytics to monitor learners' advancement and customise instructional material accordingly, optimising learning efficacy (Crescenzi et al., 2020). Technology has greatly improved access to adult education, making it one of its most important achievements. Online learning platforms help overcome traditional obstacles to education, such as geographical isolation and limited resources. Technology-enabled education provides a crucial opportunity for marginalised populations, such

as rural communities and working adults, to access educational resources that were previously inaccessible (UNESCO, 2020). In addition, technology has enabled the widespread dissemination of open educational resources (OER), which are freely accessible and usable by anybody (Alves et al., 2019). Providing open access to educational materials promotes inclusion and empowers learners from various socio-economic backgrounds.

The utilisation of technology has revolutionised the process of acquiring knowledge by promoting active involvement and involvement among adult learners. Interactive multimedia resources, such as movies, simulations, and gamified learning modules, engage learners and improve their understanding (Eisenhardt & Doering, 2021). Collaborative online platforms facilitate the connection of learners with their peers, allowing them to exchange ideas and participate in meaningful debates. This process promotes the development of a sense of community and collaboration among learners (Means et al., 2019). Moreover, technology enables the practical use of knowledge by providing immersive learning experiences, such as virtual reality simulations and online labs, which increase learner motivation and involvement (Makransky et al., 2019).

The incorporation of technology in adult education has resulted in measurable enhancements in learning results. Studies have shown that using technology to enhance learning environments leads to greater levels of acquiring, retaining, and applying knowledge compared to traditional classrooms (Khalil et al., 2020). In addition, tests that utilise technology offer learners prompt feedback, allowing them to track their progress and pinpoint areas where they may enhance their performance (Cannady et al., 2019). In addition, digital credentials, such as badges and certificates obtained from online courses, improve the job chances and professional advancement of learners, hence promoting socio-economic empowerment (Bayeck et al., 2021).

The utilisation of technology has the capacity to greatly alter adult education by improving the ability to reach, involve, and achieve desired results. Through the utilisation of technology-based learning platforms and resources, adult learners can surmount conventional obstacles to education and attain their educational objectives. However, fully harnessing the capabilities of technology in adult education necessitates deliberate expenditures in infrastructure, enhancing capacity, and implementing measures to promote digital literacy. In order to guarantee equal access to high-quality education for all adult learners, it is imperative

for policymakers, educators, and stakeholders to work together and utilise the revolutionary capabilities of technology.

Challenges and Opportunities in Nigerian Communities

In the realm of adult education, Nigerian communities face a myriad of challenges that impede access to learning opportunities and hinder socio-economic development. A significant obstacle is the restricted accessibility of educational infrastructure and resources, especially in rural regions where official educational institutions are frequently lacking (Adeyinka & Odufowokan, 2020). In addition, socio-economic issues such as poverty, unemployment, and lack of knowledge worsen the problem, resulting in low literacy rates and a considerable number of adults being unable to access educational opportunities (Dike & Ogedebe, 2018). Moreover, conventional approaches to adult education, such as in-person classes, are sometimes unfeasible or unattainable for numerous individuals as a result of geographical obstacles, time limitations, or familial obligations (Adeyinka & Odufowokan, 2020). This underscores the necessity for inventive strategies that may surmount these obstacles and efficiently reach marginalised populations.

Nevertheless, among these difficulties exist chances for profound transformation, notably via using technology into adult education endeavours. The increasing progress of digital technology offers significant opportunities to utilise these tools in order to overcome conventional obstacles and establish novel pathways for learning (Adeyinka & Odufowokan, 2020). For example, the widespread use of mobile devices and internet access allows educational content to be easily accessed by learners, regardless of where they are. In addition, technology-based platforms, such as online courses, virtual classrooms, and mobile learning applications, can offer adaptable learning possibilities that meet the varied requirements and situations of adult learners (Dike & Ogedebe, 2018). These platforms can cater to those who were previously unable to access traditional educational settings due to different limitations by providing self-paced learning modules, interactive multimedia materials, and personalised support systems.

Moreover, technology has the capacity to improve the calibre and pertinence of adult education programmes through enabling immediate access to current knowledge, practical skills development, and collaborative learning opportunities (Dike & Ogedebe, 2018). Learners can participate in experiential learning activities that replicate real-world situations and enhance

critical thinking and problem-solving abilities through interactive simulations, virtual laboratories, and online forums. Moreover, technology-facilitated education can cultivate a mindset of perpetual learning and ongoing enhancement of skills, which is crucial for individuals to adjust to the ever-changing job market and economy (Adeyinka & Odufowokan, 2020). Technology-enabled adult education programmes can empower individuals by providing chances for professional development, vocational training, and entrepreneurship education. This can help them follow new career pathways, improve their employability, and contribute to economic growth and prosperity.

Successful Initiatives that have Leveraged Technology for Adult Education in Nigeria

Various successful endeavours in Nigeria have showcased the profound impact of technology on adult education, leading to community empowerment and socio-economic progress. An exemplary case study is the "Digital Village Project" executed by the Nigerian government in conjunction with non-governmental organisations (NGOs) and private sector allies. The objective of this project was to offer adults in rural communities digital literacy and vocational training by setting up digital learning centres that are equipped with computers and internet connectivity. The initiative employed a blended learning methodology, integrating online resources with in-person education facilitated by qualified educators. The Digital Village Project equipped participants with fundamental digital skills, including basic computer literacy, internet browsing, and digital communication. Furthermore, vocational training programmes provided participants with hands-on skills in fields such as agriculture, entrepreneurship, and healthcare. This allowed them to pursue income-generating possibilities and make a positive impact on the local economy. According to a study conducted by Adeloje et al. (2019), those who underwent the training reported enhanced livelihoods and greater access to job prospects. This suggests that technology-enabled adult education has a favourable influence on socio-economic outcomes.

Another commendable endeavour is the "Mobile Learning for Teachers Programme" executed by a coalition of education-oriented non-governmental organisations in partnership with telecoms corporations. This programme sought to augment the proficiency of educators in isolated regions by providing them with mobile-based professional development courses and materials. Teachers utilised smartphones and tablets to access customised interactive learning

modules, educational films, and instructional materials that were specifically designed for their subject areas and teaching requirements. The programme also enabled peer learning and collaboration through online forums and virtual communities of practice. The Mobile Learning for Teachers Programme showcased the efficacy of mobile technology in surmounting geographical obstacles and enhancing educators' access to high-quality education in disadvantaged regions. In a study conducted by Ogunlade et al. (2020), it was discovered that teachers who took part in the study reported a boost in their self-assurance in teaching, incorporation of advanced teaching methods, and enhanced academic achievements among their students. Furthermore, the programme played a role in keeping experienced instructors in isolated schools, thus improving the quality and fairness of education.

These case studies showcase the essential methods and approaches that have demonstrated their effectiveness in utilising technology for adult education in Nigeria. An effective approach involves incorporating technology into current community infrastructure, such as digital learning centres and mobile networks, to guarantee broad accessibility and long-term viability. Furthermore, collaborations among government agencies, non-governmental organisations (NGOs), commercial sector entities, and local communities are crucial for mobilising resources, exchanging specialised knowledge, and organising activities to tackle the varied educational requirements of adult learners. Moreover, the utilisation of blended learning methods that integrate online resources with in-person teaching allows for customised learning experiences that cater to a wide range of learning styles and preferences. This hybrid paradigm additionally promotes community involvement, interpersonal communication, and mutual assistance, hence improving the entire educational experience and results for adult learners.

Importance of Digital Literacy in Accessing Technology-Driven Education

The importance of digital literacy is becoming more widely acknowledged as an essential ability in the 21st century, especially when it comes to accessing education that is driven by technology (Bawden, 2008). With the increasing prevalence of technology in educational environments, learners of all ages must possess the necessary skills to proficiently traverse digital platforms, utilise digital tools, and critically assess online material (Warschauer, 2006). Within the field of adult education, where people may have different levels of experience with technology, digital literacy is essential for enabling learners to actively participate in educational

resources and opportunities (Selwyn, 2011). In addition, digital literacy extends beyond mere technological competence and includes the capacity to comprehend and assess digital material in a discerning manner (Livingstone, 2012). In an era dominated by the abundance of information and the quick spread of false information, individuals need to acquire the ability to distinguish trustworthy sources, assess the dependability of information, and use digital platforms responsibly (Hargittai, 2002). Lack of essential digital literacy skills can make learners vulnerable to misinformation, disinformation, and online dangers, impeding their capacity to fully leverage technology-driven education (Van Deursen & Van Dijk, 2014).

However, the task of promoting digital literacy among adult learners is difficult, especially in regions where there is limited availability of technology and digital resources (Warschauer, 2006). In Nigeria, there are inequalities in technology access and internet connectivity across urban and rural locations, as well as among different socio-economic categories (Adejuyigbe et al., 2019). In addition, language hurdles, limited access to formal education, and cultural values might worsen digital exclusion among marginalised people (Livingstone, 2004).

In order to tackle these difficulties and advance the goal of inclusion in technology-based education, a range of solutions can be utilised (Selwyn, 2011). An effective strategy involves offering customised digital literacy training programmes that address the unique requirements and situations of adult learners (Livingstone, 2012). These programmes should prioritise not just the instruction of technical skills, but also the promotion of critical thinking, information literacy, and online safety (Hargittai, 2002). By providing learners with these fundamental abilities, they can more effectively navigate the digital terrain, gain access to educational resources, and participate more efficiently in online learning environments (Van Deursen & Van Dijk, 2014).

Moreover, endeavours to foster digital inclusion should also tackle infrastructural obstacles to access (Warschauer, 2006). This may entail implementing strategies to enhance internet connectivity in places that lack adequate service, offering inexpensive or subsidised access to digital devices, and improving digital infrastructure in community learning centres or adult education institutions (Adejuyigbe et al., 2019). Moreover, collaborations across governmental entities, non-profit entities, and private sector participants can have a pivotal

impact on broadening the availability of digital resources and advancing programmes to enhance digital literacy in marginalised areas (Selwyn, 2011).

Having digital literacy skills is crucial for being able to use technology-based education in the 21st century, especially in the field of adult education (Bawden, 2008). To promote inclusion and ensure equal access to technology-enabled learning, it is important to develop digital literacy skills among learners and overcome any hurdles that may exist (Livingstone, 2004). By implementing specific interventions and working together, we can enable individuals to utilise technology to its fullest extent for continuous learning and improvement in both their personal and economic circumstances (Warschauer, 2006).

Assessment of the Socio-Economic Impact of Technology-Enabled Adult Education

Economic empowerment is a noteworthy outcome of technology-enabled adult education interventions in terms of their socio-economic impact. According to a study conducted by Azuka and Oyibode (2020), the availability of technology-based educational programmes has allowed adult learners in Nigerian communities to gain additional skills and information, which in turn improves their chances of finding employment and increasing their income. Participants are provided with the necessary skills and knowledge required in the current digital economy through online courses, virtual training programmes, and digital skills seminars. This not only enables individuals to attain higher-paying employment opportunities but also facilitates their exploration of entrepreneurial endeavours and their contribution to the local economy.

Moreover, adult education programmes that utilise technology help community members enhance their skills. According to Okeke and Umeasiegbo (2019), these interventions offer opportunities for individuals to gain both technical and soft skills that are crucial for personal and professional development. Online platforms provide courses in high-demand areas such as coding, digital marketing, financial literacy, and communication skills. Adult learners who acquire these skills are more adept at adjusting to evolving labour market requirements and making significant contributions to their communities.

Furthermore, the impact assessment highlights the significance of technology-based adult education interventions in promoting community development. A study conducted by Adesope and Akinyemi (2021) found that communities who have access to these interventions

demonstrate enhanced social cohesion, increased civic involvement, and improved collective problem-solving ability. Residents can engage in knowledge sharing, resource sharing, and collective problem-solving by utilising collaborative learning systems and virtual community forums. Furthermore, as individuals acquire fresh expertise and understanding, they become proactive catalysts for transformation in their communities, spearheading endeavours that foster socio-economic progress and sustainable means of living. The evaluation of the socio-economic effects of technology-based adult education interventions in Nigerian communities showcases their substantial contributions to economic empowerment, skill enhancement, and community advancement. By utilising technology to increase the availability of educational and training opportunities, these interventions not only empower individuals to enhance their means of living but also promote inclusive and resilient communities. Nevertheless, it is crucial for stakeholders, policymakers, and practitioners to persist in monitoring and assessing these interventions to guarantee their efficacy and durability in the long term. By working together and making smart investments, we can fully utilise the power of technology-based adult education to promote social and economic development in Nigeria.

Future Trends and Challenges in Technology and Adult Education

In the face of a growing digital world, adult education is on the verge of significant change, influenced by advancing technological developments. An important trend is the increasing number of personalised and adaptive learning systems that utilise artificial intelligence (AI) and machine learning algorithms to customise educational content and experiences based on the specific requirements and preferences of each learner (Freeman, 2020). These technologies could potentially transform adult education by providing personalised learning paths that maximise engagement and information retention, hence improving the effectiveness of educational interventions (Gibson & Ostashewski, 2021).

In addition, the development of immersive technologies like virtual reality (VR) and augmented reality (AR) shows potential for building immersive learning environments that replicate real-life situations and enable experience learning (Yang & Hsiao, 2019). VR and AR technologies have the potential to improve understanding and memory, especially in vocational training and skills development programmes, by allowing learners to engage with content in three-dimensional environments (Wong, 2021).

Nevertheless, in addition to these encouraging advancements, there are some imminent concerns. An urgent issue is the digital gap, which worsens disparities in technology access and educational possibilities (Warschauer & Matuchniak, 2010). In areas with inadequate infrastructure and restricted access to communication networks, disadvantaged populations may face difficulties in harnessing the advantages of technological advancements in adult education, hence exacerbating pre-existing socio-economic inequalities (Selwyn, 2010). Moreover, the swift rate of technology progress presents difficulties pertaining to digital literacy and the acquisition of skills. Adult learners must continuously adapt to gain the digital abilities required to traverse a progressively intricate digital ecosystem, as new tools and platforms arise (OECD, 2019). If the skills gap is not addressed, it could impede the successful incorporation of technology in adult education and restrict its ability to empower individuals and communities.

Moreover, the ethical ramifications of technology in education necessitate thoughtful deliberation. The ethical use of technology in adult learning environments is a matter of concern due to issues such as data privacy, algorithmic prejudice, and digital surveillance (Williamson, 2020). Ensuring the privacy of learners and providing equal access to educational resources are crucial for building trust and encouraging inclusivity in adult education programmes that utilise technology. To fully harness the potential of technology in adult education, it is crucial to conduct additional research and foster innovation. To overcome current obstacles and promote equal access, improved learning outcomes, and digital empowerment for all adult learners, it is crucial for researchers, educators, policymakers, and technology developers to collaborate and explore novel solutions. By adopting a progressive mindset and utilising emerging technology in a responsible manner, we can create a future in which adult education plays a crucial role in driving socio-economic progress and empowering communities worldwide.

Conclusion

To summarise, the incorporation of technology in adult education has significant potential to empower communities and stimulate socio-economic progress in Nigeria. By examining several programmes and case studies, it becomes clear that technology can effectively tackle the issues of access, participation, and quality in adult education, especially in underprivileged populations. Technology empowers individuals to gain important skills and

information for socio-economic growth through flexible learning possibilities, improved digital literacy, and increased cooperation.

An important discovery is the significance of customised interventions that consider the distinct requirements and circumstances of Nigerian communities. Efforts like mobile learning platforms, community-based learning centres, and digital skills training programmes have proven effective in reaching disadvantaged groups and equipping learners with practical skills for jobs and starting businesses. These efforts act as prototypes for future interventions, highlighting the importance of localised solutions that prioritise inclusivity and relevance.

Furthermore, the need of digital literacy becomes apparent as a crucial element in guaranteeing the efficiency and fairness of technology-based education. According to UNESCO, digital literacy includes not just technical abilities, but also the capacity for critical thinking, ethical conduct, and the aptitude to find and use information in a digital setting (UNESCO, 2019). Hence, it is imperative to incorporate initiatives that foster digital literacy into adult education programmes, emphasising the empowerment of learners to effectively and confidently interact with technology, utilising it to further their personal and professional development.

In order to ensure the sustainable integration of technology in adult education, it is imperative for policymakers, stakeholders, and practitioners to work together and create a supportive environment. This involves creating policies and procedures that give priority to investing in digital infrastructure, training teachers, and establishing curriculum. In addition, collaborations across government agencies, civil society organisations, and the commercial sector can help gather resources and exchange expertise, promoting innovation and scalability in technology-based educational projects.

Additionally, it is necessary to consistently monitor and evaluate the effects of technology-based interventions in adult education in order to make informed decisions based on evidence. Thorough investigation and systematic gathering of data are crucial for comprehending the efficacy of various methods, establishing optimal strategies, and tackling emergent obstacles. Stakeholders may enhance their plans and optimise resource allocation by utilising research findings and lessons gained. This will enable them to maximise the socio-economic advantages of technology in adult education.

In light of these findings, several actionable recommendations can be proposed:

1. Formulate inclusive and extensive national policies and initiatives to use technology into adult education, prioritising equal access and high-quality results.
2. Allocate resources towards the development of digital infrastructure and the enhancement of teacher skills to ensure the successful deployment and long-term viability of technology-based education programmes.
3. Facilitate cooperation among the government, civil society, academia, and the corporate sector to utilise resources and knowledge in order to expand the implementation of effective initiatives.
4. Give priority to providing digital literacy training for adult learners, with a focus on developing critical thinking, information literacy, and digital citizenship skills.
5. Develop systems for monitoring and evaluating the effects of technology-based educational interventions in order to make informed decisions based on evidence.

Nigeria may fully harness its human capital and promote equitable socio-economic development for the 21st century by accepting these recommendations and implementing a comprehensive strategy to technology-enabled adult education.

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