



ETHICAL IMPLICATIONS OF USING EDUCATIONAL TECHNOLOGY FOR SOCIOECONOMIC AND POLITICAL RECONSTRUCTION IN NIGERIA

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Abstract

Nigeria is Africa's most populous country with abundant natural and human resources, including abundant oil reserves. Despite this potential, the country is confronted with significant socioeconomic and political challenges, including extreme poverty, corruption, ethnic and religious conflicts, and weak institutions. To address these challenges, scholars and policymakers have shown a consistent interest in political and socioeconomic reconstruction. The purpose of this study is to examine the ethical implications of the experiences and perspectives of individuals involved in the use of educational technology for socioeconomic and political reconstruction in Nigeria. Data were collected from a purposive sample of twelve stakeholders, consisting of policymakers, educators, and students, through semi-structured interviews. Thematic analysis was used to identify patterns and themes in the data. Findings showed that equal access to educational technology, diversity and inclusivity, data security, and responsible digital citizenship are major ethical issues that must be addressed to develop a competitive workforce and improve socioeconomic and political inequalities. Innovative solutions to prioritize access to educational technology, promote diversity and inclusivity, use of technology to address existing inequalities, and promote social justice were some of the recommendations made.

Keywords: educational technology, socio-economic, political reconstruction, ethical implication

Introduction

Nigeria is Africa's most populous country with an estimated population of 219 million people and a land mass of 923,768 square kilometres. It has abundant natural resources and is the fourteenth largest exporter of crude oil in the world. From 2022 estimates, the country has a gross domestic product (GDP) of \$440 billion and per capita GDP of \$2,429. It is estimated that Nigeria has a population growth rate of 2.53%. With these enormous natural and human resources, the country ought to be one of the world's leading economies but, Nigeria is still entrapped in a web of enormous socioeconomic and political challenges which hinder her growth. Such include; extreme poverty, political violence, electoral fraud, corruption, fragile political structures, weak institutions, inequality, and political instability. The country has also experienced major crises, such as the COVID-19 pandemic, the Boko Haram insurgency, economic recession, Fulani herdsmen crisis, EndSARS protest, ethnoreligious conflicts, and tertiary institution strikes which have further compounded these challenges. Throughout its history, Nigeria has experienced severe political crises, including military coups, ethnic and religious conflicts, and a protracted struggle for democracy. In recent years, there has been increasing interest in studying the process of political reconstruction in Nigeria, particularly in the aftermath of the end of military rule in 1999. The transition to civilian rule presented a unique opportunity for political reconstruction, as the country strove to establish democratic institutions and promote national reconciliation. However, the process has been



marred with challenges such as political violence, corruption, and the continued marginalization of certain ethnic and religious groups.

Political reconstruction refers to the process of rebuilding a political system or government after a significant political crisis, such as a civil war or a regime change. This process usually entails major reforms aimed at establishing a new political order that is more stable, democratic, and responsive to citizens' needs and aspirations (Ikpe, 2021). Depending on the circumstances and goals of the process, political reconstruction can take many various forms. It may require promoting civic education and national reconciliation and providing individuals with the knowledge, skills, and values necessary to engage in informed and active citizenship. In other cases, it may involve the drafting of a new constitution, the establishment of new institutions, such as a parliament or an independent court, or the implementation of policies aimed at addressing the root causes of the conflict. Regardless of the specific form it takes, political reconstruction is a complex and challenging process that requires the participation and cooperation of all stakeholders, including the government, educators, civil society organizations, political parties, and the international community. It is a crucial step towards creating a stable and prosperous society that upholds the values of democracy, human rights, and the rule of law.

Socioeconomic is the study of the interaction between social and economic factors in a society. It examines how economic factors like wealth, income, and education influence social outcomes such as social mobility, health, and well-being (Adebowale, 2021). Nigeria has faced enormous socioeconomic issues, such as poverty, inequality, and a lack of access to fundamental amenities like education and healthcare. Nigeria has a considerable wealth disparity, with a large section of the population living in poverty while a small minority enjoys immense riches. To overcome this issue, efforts should be directed toward developing a more inclusive economy that gives chances for all Nigerians to succeed. This could include activities like investing in education and job training programs, expanding access to finance for small and medium-sized businesses, and enacting legislation to encourage equitable resource distribution (Ikpe, 2014).

The concept of socioeconomic reconstruction has received more attention in recent years, as Nigeria has faced major crises such as the Boko Haram insurgency and the COVID-19 pandemic that have undermined its economic and social systems. The COVID-19 pandemic has highlighted the need for socioeconomic reconstruction in Nigeria, exposing existing vulnerabilities and widening existing inequalities. The pandemic has also underlined the significance of bolstering healthcare systems, promoting social welfare programs, and assisting small companies and entrepreneurs. In several cases, the process of reconstruction has been hampered by political instability, corruption, and inadequate resources. Socioeconomic reconstruction can take several forms, depending on the exact circumstances and goals of the process. It may involve creating jobs, establishing a new school, rebuilding infrastructure, promoting economic growth, providing social services, and addressing inequality and poverty (Adebowale, 2021). This process often requires the participation of a range of stakeholders, including educators, government officials, civil society organizations, international aid agencies, and private sector actors.

In Nigeria, there has been a great deal of interest in both socioeconomic and political reconstruction. Scholars and policymakers have investigated the difficulties of resolving poverty and inequality, encouraging economic growth, and establishing democratic institutions. Aigbokhan and Oaikhena (2017) identify corruption and political instability as major obstacles to sustainable development. Research in



socioeconomic and political reconstruction is crucial for developing effective policies and strategies that can support sustainable socioeconomic reconstruction in Nigeria and contribute to the creation of a more just and prosperous society.

Statement of the problem

In Nigeria, the use of educational technology for socioeconomic and political reconstruction must take into account the specific challenges and opportunities facing the country. This includes addressing issues such as limited access to technology and digital literacy, and ensuring that the adoption of educational technology is inclusive and equitable. While technological innovations have the potential to promote inclusive and sustainable development, they also can reinforce existing power dynamics and worsen inequalities. The use of educational technology raises concerns about the role of technology in shaping political discourse and participation. While digital tools and other social media platforms have the potential to promote democratic participation and civic engagement, they may also be used to spread disinformation and undermine the integrity of democratic institutions, also it may raise concerns related to privacy, data security, and digital rights. Overall, the study will explore the ethical and social implications of using educational technology for socioeconomic and political reconstruction in Nigeria in the 21st century by examining the potential benefits and risks of using educational technology for reconstruction efforts, as well as identify strategies for ensuring that these efforts are inclusive, equitable, and sustainable.

Literature Review

When using educational technology to promote socioeconomic and political reconstruction in Nigeria, stakeholders should consider a variety of ethical issues to ensure that positive outcomes are promoted while avoiding consequences that could be inimical. Several ethical considerations should be taken into account including but not limited to ensuring that the technology is accessible to all learners, protecting the privacy and security of learner data, promoting diversity and inclusivity and that the technology is used in ways that are consistent with human rights and democratic values. These are discussed below.

1. Equal Access

Educational technology has emerged as a powerful tool for promoting socioeconomic and political reconstruction in Nigeria. The country faces several challenges in terms of access to technology particularly for people from low-income families and rural communities. The Nigerian government has actively promoted the use of technology to drive socioeconomic development. The Nigerian Communications Commission (2021) announced plans to establish a Digital Economy Department to promote the use of technology in various sectors such as education, healthcare, agriculture, and other essential services, which could positively impact Nigeria's socioeconomic and political reconstruction. Educational technology on the other hand can help to promote equal access to education by allowing individuals to access educational resources through online learning platforms and digital books and letting them learn at their own pace while also ensuring that they have access to the most up-to-date information (Adeyemo and Adeyemo, 2020). According to a report by the United Nations Educational, Scientific and Cultural Organization (2020), inclusive technologies can contribute to a more inclusive society, where every individual has the opportunity to fulfil their potential. The report emphasizes that inclusive technology can help in the socioeconomic development of a country by providing equal access to education and ensuring that every individual is equipped with the necessary skills to participate in the



digital economy. The use of educational technology can cater to the needs of everyone and help address the issue of gender inequality by providing equal access to education for girls and boys.

One of the ethical implications of the use of educational technology resources is the possibility of exclusion and marginalization of individuals and groups who do not have access to or the skills to effectively use it. This could worsen the already-existing digital divide, in which certain segments of the population lag in technological adoption. Concerns have also been raised about the use of these resources for political manipulation and surveillance. Social media platforms have been used to spread false information and propaganda, and there are fears that they will be used for mass surveillance and censorship (Akinwunmi & Salami, 2021).

2. Data privacy and security

The concept of data privacy and security is a critical consideration when it comes to the ethical and social implications of using educational technology for socioeconomic and political reconstruction in Nigeria. Educational technology has the potential to transform the Nigerian education sector and contribute to the socioeconomic development of the country. However, the use of technology also poses significant risks to personal data privacy and security, which can have serious consequences for individuals, organizations, and society as a whole. Further, there are ongoing debates about the regulation of social media in Nigeria, with some arguing that the government's proposed regulations could stifle free speech and violate citizens' privacy rights. An example could be seen in the year 2020, when the Nigerian government shut down the internet in certain regions during protests against police brutality, raising concerns about using technology for political control (Olawoyin, 2020).

Data privacy refers to the protection of personal data from unauthorized access, use, or disclosure, while data security refers to the measures put in place to safeguard data from theft, damage, unauthorized access, or modification (Oluwafemi, 2021). These concepts are critical to ensuring that sensitive information is not misused, mishandled, or accessed by unauthorized personnel, and also help to build trust between individuals and institutions. In Nigeria, educational technology has the potential to increase access to education while also promoting socioeconomic development. However, there are concerns about how personal data is collected, stored, and used in these technological platforms. Personal data has been compromised or misused in the past, raising concerns about data privacy and security. EdTech companies collect and use personal data without obtaining explicit consent from individuals. These companies frequently collect sensitive information, such as biometric data, location data, and browsing history, which can be used for purposes other than education. This can result in data breaches, identity theft, and other forms of cybercrime that are harmful to both individuals and organizations.

The ethical implications of data privacy and security breaches are significant. These breaches can result in identity theft, financial fraud, and personal reputation damage. In the case of educational technology, these breaches can also result in the misuse of personal data, including sensitive information such as grades, disciplinary records, and attendance records. This can lead to discrimination, exclusion, and stigmatization, which can further worsen existing inequalities in society (Uwaje, 2020). In addition to ethical concerns, data privacy and security breaches have social implications. These breaches can erode trust in educational institutions and technological platforms, leading to a loss of confidence in the education system as a whole. This can also hurt the economy and society as a whole, as people may be hesitant to share their personal information with these institutions, leading to a lack of participation in



educational and other developmental initiatives. Okpanachi (2021) identified Nigeria lacks comprehensive data protection laws, making it difficult to hold EdTech companies accountable for data privacy breaches. Existing laws such as the Cybercrime Act and the Freedom of Information Act are inadequate in addressing these concerns.

In 2019, the Nigerian Data Protection Regulation (NDPR) was introduced to protect personal data and promote responsible data use in the country. One of the objectives of NDPR is to give individuals control over their data and to ensure that organizations that collect and process these data do so responsibly. Although technology can play a significant role in a country's development, a violation of data privacy and security can result in severe ethical and social implications. It can also erode trust in technological platforms and educational institutions. Uwaje (2020) suggested that Nigeria can leverage the potential of educational technology while safeguarding the privacy and security of personal data by enacting comprehensive data protection laws and regulations and implementing best practices for data protection.

3. Diversity and inclusivity

The concept of diversity and inclusivity has become imperative in the context of using educational technology for socioeconomic and political reconstruction in Nigeria. Nigeria is a country with over 200 million people and more than 500 ethnic groups, each with its own culture and language. The country also faces numerous socio-economic and political challenges, such as high levels of poverty, inequality, and corruption. As a result, using educational technology to address these challenges necessitates a thorough understanding of the concepts of diversity and inclusivity.

Diversity refers to the presence of multiple identities and perspectives within a group or society. In the context of education, diversity includes differences in socioeconomic status, race, culture, ethnicity, language, religion, gender, sexuality, and ability (Ribeiro and Silva, 2021). Inclusivity, on the other hand, refers to the creation of an environment that values and respects the differences of all individuals and ensures that all members of a group or society can participate equally and fully (Uzoegwu & Ezeudu, 2019). One of the ethical and social implications of the lack of inclusive technology is that it widens the digital divide, resulting in a socioeconomic gap in terms of access to education (Olatokun, 2021). This gap can result in some individuals or groups being left behind in terms of education and future opportunities. Yusuf and Adegbenro (2017) state that the implementation of educational technology in Nigeria must take into account the digital divide as well as learners' socioeconomic status. The use of educational technology can help bridge the digital gap between urban and rural areas in Nigeria and can be done inclusively by taking into account learners' diverse cultural and linguistic backgrounds.

According to a report by the United Nations Educational, Scientific and Cultural Organization (2020), diversity and inclusivity in educational technology can contribute to Nigeria's political reconstruction by promoting social cohesion and ensuring that everyone regardless of background has access to education. This can lead to a better understanding of different cultures and perspectives, fostering peace and unity in the country. When using educational technology for socioeconomic and political reconstruction in Nigeria, the idea of diversity and inclusivity is essential. It requires taking into account learners' multiple identities and perspectives, as well as the socioeconomic and political contexts in which they live. Inclusive educational technology can be used as a tool for social and economic development by ensuring equal access to education, promoting social cohesion, and assisting in the country's socioeconomic development.



4. Digital citizenship

Digital citizenship refers to the responsible and ethical use of technology in the digital world, including the internet, computers, and mobile devices. It involves thinking critically, behaving and participating responsibly, and understanding how to navigate the digital space safely and ethically, as well as using technology to connect with others, share ideas, and engage in productive and meaningful activities (Ribbles, 2020). Digital citizenship is essential for socioeconomic and political reconstruction, as it enables citizens to leverage educational technology to access information, build skills, and participate in democratic processes.

Digital citizenship in Nigeria involves considering ethical and social aspects related to the use of technology for socioeconomic and political development. This includes concerns regarding privacy, data protection, and digital rights. It also involves recognizing how technology can exacerbate existing inequalities and power imbalances. As Ojo and Owolabi (2020) have stated, being a digital citizen requires a commitment to using technology in ways that promote social justice, equity, and inclusion. There are numerous ethical implications to using educational technology for socioeconomic and political reconstruction in Nigeria. One of the most important is to ensure that access to technology is not restricted based on socioeconomic status, as this can lead to a digital divide that further marginalizes certain groups in society because digital citizenship entails respecting others' online rights and responsibilities (Council of Europe, 2023). Another important aspect of digital citizenship in Nigeria is ensuring that technology is not used in ways that violate human rights or lead to political repression. The Ethics of Digitalization project emphasizes the importance of dialogue and action at the intersection of science, politics, the digital economy, and civil society to ensure that technological benefits are not outweighed by negative consequences (Berkman Klein Center, 2023).

Online safety and security is an important aspect of digital citizenship in Nigeria. Given the widespread use of social media and other online platforms, people must be aware of the dangers involved. This includes safeguarding private data, preventing cyberbullying and harassment, and spotting phishing and other online scams. As noted by Adegbola (2020), a responsible digital citizen must be alert, understand risks, and take appropriate action to mitigate them. Further, Akomolafe et al. (2021) opined that digital citizenship should involve the development of digital skills that enable citizens to use technology effectively to access information, build networks, and create knowledge. There is a need for digital literacy and skills development. This includes basic computer skills, as well as the ability to use educational technology for learning and knowledge creation. In a country where access to high-quality education is often limited, technology has the potential to transform learning and skill development opportunities.

As Nigeria seeks to use technology to improve its socioeconomic status and democratic participation, the concept of digital citizenship is crucial to understanding the ethical and social implications of utilizing educational technology for socioeconomic and political reconstruction in Nigeria. By promoting responsible and ethical use of technology, developing digital literacy and skills, and recognizing the ethical and social implications of technology use, citizens can leverage educational technology to improve their lives and contribute to a more just and equitable society.

Research Questions

1. what ethical considerations should be taken into account when using educational technology to promote socioeconomic and political reconstruction in Nigeria, and how can we ensure that these considerations are addressed?
2. What are the potential solutions to the ethical implications of using educational technology for socio-economic and political reconstruction in Nigeria?

Methodology

This study adopted a qualitative research design that is commonly used to investigate complex social phenomena and issues. It involves an in-depth examination of a particular case, which can be an individual, a group, an organization, or a community. The focus of the research is to explore the use of educational technology for socioeconomic and political reconstruction in Nigeria. A case study method will be utilized to gain insight into the experiences and perspectives of individuals involved in the use of educational technology for reconstruction. The study targets all stakeholders who are involved in using educational technology for reconstruction in southwest Nigeria. A purposive sampling technique was employed to select a sample of twelve (12) participants based on their knowledge, experience, and expertise on the research topic. The selected 12 participants included four policymakers, four educators, and four students, selected across the southwestern region of Nigeria.

Table 1: *Demographics of participants*

Participants	Gender	Stakeholder	Stakeholder description
1	Male	Policy Maker 1	(Member, Federal House of Representatives)
2	Female	Policy Maker 2	Vice Chairman of a Local Government
3	Male	Policy Maker 3	Public Affair Analyst
4	Male	Policy Maker 4	(Member, State House of Assembly)
5	Female	Educator 1	Principal
6	Female	Educator 2	Vice-Principal
7	Male	Educator 3	Lecturer
8	Female	Educator 4	Classroom Teacher
9	Female	Student 1	University
10	Male	Student 2	University
11	Male	Student 3	College of Education
12	Female	Student 4	Polytechnic

The research employed a semi-structured interview as the primary data collection method. The interviews were conducted face-to-face and over the telephone depending on participants' availability and preference. To establish the face validity and content validity as suggested by Bolarinwa (2015), the instrument was shared with a panel comprising three researchers having extensive research experience. The research instrument was finalized after incorporating the suggestions and feedback of this panel. The interviews were audio-recorded and transcribed verbatim for analysis.

The data collected from the interviews underwent thematic analysis, which is a widely used method in qualitative research that involves identifying and analyzing patterns or themes in the data. The analysis process followed a six-step process recommended by Braun & Clarke (2006). Firstly, responses were extensively coded to develop a deeper understanding of them. Then, preliminary codes were assigned to the data to describe the content. After that, different patterns or themes were identified, and a review of these themes was conducted. The prominent themes were then named and finally reported in the findings of the study. To identify themes in the coded data, word-based techniques were employed, such as word repetitions and key-words-in-contexts (KWIC). Using these techniques, keywords were identified, and the corpus of text was systematically searched to find all instances of each of the identified words or phrases. When a keyword was identified, a copy was made, as well as its immediate context. In this way, themes were identified by physically sorting the examples into piles of similar meanings (Ryan and Bernard, 2000).

Findings

Research question 1: What ethical considerations should be taken into account when using educational technology to promote socioeconomic and political reconstruction in Nigeria, and how can we ensure that these considerations are addressed?

When using educational technology to promote socioeconomic and political reconstruction in Nigeria, stakeholders must consider a variety of ethical issues to ensure that positive outcomes are promoted while avoiding any harm or negative consequences. All participants acknowledged several ethical considerations that should be taken into account. Their responses formed the basis of this discussion.

Equal access

All the participants agreed that the lack of equal access to educational technology has had adverse effects and far-reaching consequences on the socioeconomic and political reconstruction efforts in Nigeria. Participant 1 responded that:

The COVID-19 pandemic brought to light our country's digital divide, which has exacerbated inequalities and poverty and the lack of equal access to educational technology has widened the socioeconomic divide between the privileged and the marginalized. Majorities of Nigerians do not have access to basic technological infrastructure such as a stable internet connection or electricity and children from low-income families are unable to acquire the necessary skills to compete in a digital world without access to educational technology, creating a difficult-to-break cycle of poverty.

(Participant 1)

Another participant stated that the lack of equal access to educational technology has hindered political and socioeconomic reconstruction efforts in Nigeria, particularly in the southwest.

education is essential for cultivating critical thinking skills, encouraging civic engagement, and instilling democratic values, the inability of citizens to obtain quality education can result in the spread of illiteracy and ignorance, which unscrupulous politicians can use to manipulate public opinion and undermine democracy. Also, the lack of access to educational technology hinders the ability to develop a competitive workforce which in turn, affects our ability as a nation to attract



foreign investment and foster a vibrant private sector, leading to stunted economic growth and limited job creation

(Participant 2)

An educator who responded to the question noted that

Nigeria's education system is dealing with significant challenges, including lack of schools, inadequate infrastructure, unsafe environments and teacher training limitations and the current shift to remote learning has worsened these issues, especially for students who do not have access to technology. I believe that innovative solutions that prioritize access to educational technology, mostly in rural areas, may help to close the gap and improve the challenges.

(Participant 5)

A student participant stated that

in several communities and local governments, the high costs and a general lack of infrastructure, have limited access to digital technologies, ranging from lack of electricity to lack of ICT facilities. Again, Inequality in access to educational technology has caused a digital divide that has worsened socioeconomic inequality. Several students who do not have access to digital devices or internet connectivity are at a disadvantage because they cannot receive the same quality of education as their colleagues do and this continues the poverty cycle because access to quality education is critical in lifting people out of poverty and assisting them in reaching their full potential.

(Participant 11)

Participant 10 acknowledges that the lack of equal access to educational technology has also resulted in a crisis in the education sector in Nigeria, and to address this crisis, the government should as a matter of urgency implement its promise to increase its annual domestic education spending by 50% over the next two years and by 100% by 2025. Without addressing the issue of unequal access to educational technology, it will be difficult to improve the quality of education in Nigeria.

Diversity and Inclusivity

All participants acknowledged that diversity and inclusivity play a huge role in the socio-economic and political reconstruction of Nigeria. They responded that

It is important to ensure that every individual, regardless of socioeconomic status or geographic location, has access to the necessary devices and internet connectivity to effectively engage with technology. I suppose that teachers should consider any potential barriers that students may face as a result of linguistic or cultural differences and take steps to address these issues. Ensuring accessibility promotes equity and prevents further marginalization of already marginalized individuals.

(Participant 8)

According to another participant,

We as students must have the autonomy and the right to make our own decisions and must not be coerced into using technology in a way that violates our values and beliefs when implementing educational technology. He added that "the use of technology does not harm anyone, and it



should not reinforce marginalization or inequalities that already exist. This includes making sure that all students have equitable access to technology and that those who do not are not left behind.”

(Participant 12)

This opinion agrees with the views of an educator who acknowledged that educational technology can contribute to a more just and equitable society by promoting diversity and inclusivity. She stated:

In order to use educational technology effectively, teachers must promote diversity and inclusivity. This includes making technology available to learners from all backgrounds, including those with disabilities or from rural areas. We should strive to promote diverse points of view while avoiding reinforcing existing biases or stereotypes.

(Participant 5)

Furthermore, another participant 10 stated that when using educational technology, it is crucial to uphold justice. This means that technology should be used to address existing inequalities and promote social justice, rather than worsening them. He added

that in order to ensure that ethical considerations are addressed, it is important to involve students and other stakeholders in the decision-making process and to regularly evaluate the impact of technology use on individuals and communities.

This statement agrees with Participant 4 who stated:

there should be clear policies which are unambiguous but in a simple and specific language to avoid any misunderstandings of intent. This is especially important when implementing educational technology policies because students, teachers, and other stakeholders may have varying levels of technological literacy. And this is crucial because access to educational technology is not to be restricted to specific groups of people or socio-strata and we as policymakers should work to close the digital divide and provide equal access to educational technology for every individual.

(Participant 4)

Data Privacy and Security

Responding to questions about ethical considerations as it relates to data privacy and security, Participant 6 asserts that

teachers must take steps to protect learner data privacy and security. We must ensure that the technology used is compliant with applicable data protection regulations and learners should understand how their data is collected, stored, and used. we should also ensure that students have access to, modify, and delete their data as needed. We can also avoid potential harms such as identity theft and discrimination by safeguarding learner data.

While participant 7 added that

as teachers, the use of technology in education requires the collection and storage of sensitive data, and this data must be protected to prevent unauthorized access or misuse. The importance of data privacy and security is to ensure that student data is kept confidential, secure and protected from unofficial access. He also added that “teachers must recognize the potential for



bias and discrimination in the use of educational technology and ensure that it does not contribute to the marginalization of any group in society.”

In the views of the policymakers, Participant 3 responded that

I think as policymakers, we must ensure that any personal data collected through the use of educational technology is handled appropriately and that measures should be in place to safeguard against data breaches and other cyber threats. Also, participant 8 said, “necessary legal frameworks and policies should be in place to protect data while ensuring that it is used effectively to promote socioeconomic and political goals.”

Students think that the use of educational technology to promote socioeconomic and political reconstruction in Nigeria requires the collection and storage of sensitive data and that this data must be protected to prevent any unauthorized access or misuse. Participant 12 stated “*I fear that my data is shared with third parties without my consent and it is used for purposes other than those related to my education*”. Participant 9 agrees that her data is been used without consent but hopes that while she benefits from the use of educational technology, her personal information is protected.

Digital citizenship

In response to digital citizenship, all participants acknowledge that the responsible use, management, and protection of data is important in today's digital world. A participant stated that

the potential for educational technology to reinforce existing power structures and inequalities is something that I find concerning. In Nigeria, where there are already significant socioeconomic and political disparities, it is crucial to ensure that educational technology is accessible to all students and does not further widen the digital divide. Achieving this goal may require policy changes and investment in infrastructure to ensure that all students have equal access to technology.

(Participant 9)

While another participant responded that

Algorithms and data sets used in educational technology may reflect pre-existing biases and perpetuate stereotypes, which can harm students. We can advocate as students for the development of technology that is inclusive, equitable, and designed with all students' needs in mind.

(Participant 11)

Participant 3 opined that with the role of digital citizenship, policymakers are not oblivious to the fact that personal data can be used in an unethical manner, however, there should be measures to protect such data. This aligns with the view of two educators who gave similar responses

I believe that responsible and ethical use of data citizenship is crucial in promoting socioeconomic and political reconstruction in Nigeria through educational technology. It is important to prioritize data protection and consider potential impacts on existing inequalities while having clear policies, guidelines, and comprehensive training for teachers and students on responsible data citizenship to ensure positive and equitable outcomes.

(Participant 7)



As a teacher, it is crucial to be aware of the potential risks associated with collecting and using student data, such as invasion of privacy, data breaches, and misuse of data for other purposes apart from education. However, I also recognize that educational technology can provide valuable tools and resources for promoting socioeconomic and political reconstruction in Nigeria. For instance, online courses, digital literacy programs, and communication platforms can help bridge the digital divide and create new opportunities for students to learn and grow. Therefore, it's essential to strike a balance between utilizing technology and protecting students' privacy and rights.

(Participant 6)

Research Question 2: What are the potential solutions to the ethical implications of using educational technology for socio-economic and political reconstruction in Nigeria?

Some potential solutions to address these ethical implications are shared in the opinions of the participants. A policymaker responded that

As a policymaker, we must ensure that everyone regardless of their socioeconomic background, has access to educational technology. To achieve this, I will propose providing subsidies or incentives for low-income families to access educational technology, investing in infrastructure and internet connectivity, and offering equal access to resources and support services. I also believe there is a need to invest and integrate digital literacy programs into the curriculum by providing training and support for teachers and encouraging the development of online learning communities to educate citizens.

(Participant 1)

Another policymaker harped on the need to address the digital divide between urban and rural areas. He states that

If I have the opportunity, I will invest in infrastructure and internet connectivity in rural areas, provide incentives for technology companies to expand their services to underserved areas, and partner with local communities and organizations to develop tailored solutions to address the unique challenges of rural areas.

(Participant 4)

The educators proposed a similar opinion, they agreed that providing citizens with equal access to the use of educational technology, and adequate research would mitigate the digital divide and allow for positive development of the society.

I can work to address the issue of unequal access to educational technology by advocating for increased access and providing resources for students who may not have it. Since it is important to ensure that all students have equitable access to high-quality educational technology resources, we as teachers can provide support and training to other teachers who may not be familiar with using these resources effectively.

(Participant 8)

Promoting critical thinking and digital literacy skills among students is essential to ensure that they are prepared to use technology responsibly and effectively. Teachers should collaborate with



other stakeholders such as policymakers, industry experts, and community leaders to ensure that the use of educational technology is ethical and aligns with the goals of socioeconomic and political reconstruction in Nigeria.

(Participant 5)

The research sub-sector, especially educational research, which is the foundation for the country's socioeconomic, political, scientific, and technological advancement should be well-funded so that Nigerian researchers can be able to keep up with the latest trends in educational technology to solve socioeconomic and political issues.

(Participant 12)

Discussion

Findings revealed that unequal access to educational technology in Nigeria highlights how the digital divide worsens socioeconomic inequality and perpetuates poverty while advocating for innovative solutions to prioritize access and promote diversity and inclusivity. They emphasized the importance of clear policies and involving stakeholders in decision-making and evaluation processes. According to Ani, Uchendu and Atseye (2007), the digital gap is worsened by discrepancies in access to the Internet and the World Wide Web by Nigerians as well as a wide range of socio-economic levels, while, Onyishi and Ezechi (2019) and Okocha and Edafewotu (2022) submits that for Nigeria to progress, it has to bridge the ever-widening digital gap that exists amongst its citizens. Further, in discussing data privacy and security stressed finding indicates that there is the need to protect learner data, comply with data protection regulations, and avoid potential harms such as identity theft and discrimination while promoting responsible data citizenship for socioeconomic and political reconstruction in Nigeria. Ekweozor, (2020) acknowledges that the fundamental right to protection of personal data is recognized at the universal level in various human rights instruments adopted under the aegis of the UN, mostly as an extension of the right to privacy. It is an inalienable human right also guaranteed by the Nigerian constitution. Therefore, there must be a balance between technology utilization and privacy protection.

Further findings highlight the significance of responsible data management, usage, and protection in today's digital world with concerns raised about the potential for educational technology to reinforce existing power structures and inequalities. Okocha, Wang & Onobe (2020) reiterated that digital citizenship necessitates a broad range of skills and competencies that must be used positively in both online and offline communities since digital technology has democratized that technology space by opening up channels for citizens to participate in narrative-changing debates. He noted that digital citizens are not to limit their influence to a specific geographical location since they can engage locally, nationally as well as globally.

Conclusion

Nigeria is a country with abundant natural and human resources, but it faces significant challenges in achieving sustainable development and political stability. Issues like extreme poverty, political violence, corruption, and inequality, limited access to education and healthcare hinder its growth and progress. These challenges have been worsened by the COVID-19 pandemic and the current political landscape in Nigeria, highlighting the need for socioeconomic and political reconstruction. To achieve this, ethical considerations such as equal access, data privacy and security, diversity and inclusivity, and digital



citizenship are essential for leveraging educational technology effectively for socioeconomic and political reconstruction in Nigeria. By prioritizing these ethical principles, stakeholders can harness the potential of technology to drive positive change and contribute to a more just and equitable society.

Recommendations

The following recommendations are made based on the findings of this paper:

1. Policymakers should ensure that educational technology is accessible to all students, regardless of socio-economic status. This includes providing access to technology and the internet, as well as ensuring that digital literacy skills are taught in schools.
2. Educational technology should be designed and implemented in such a way that students' data privacy and security are protected. Policymakers should establish clear guidelines for data collection, storage, and use, and ensure that educational technology companies comply with these guidelines.
3. The training of teachers on the ethical implications of using educational technology such as data privacy, digital literacy, and online safety is highly recommended.
4. A synergy between policymakers and educators would promote digital literacy by teaching students about responsible online behaviour, including respecting others' privacy, avoiding cyberbullying, and leveraging technology for positive social change.
5. Policymakers must address Nigeria's digital divide by providing access to technology and the internet in underserved areas. This will help to ensure that all students have equal access to educational technology and the development of digital literacy skills.
6. All stakeholders should collaborate to use educational technology to promote human rights, social justice, and sustainable development, as well as to address Nigeria's socio-economic and political challenges.
7. The government should enact and implement a comprehensive data protection law outlining individuals' rights regarding the collection, use, and sharing of their data. Organizations that violate data privacy and security should face penalties under the law.
8. EdTech companies should follow best data protection practices, such as using encryption, limiting data collection, and obtaining explicit consent from individuals before collecting and using their data.

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