**CHAPTER ONE**

**INTRODUCTION**

* 1. **Background of the Study**

The integration of technology in education has been a transformative force globally, reshaping how teaching and learning processes are conducted. The advent of digital tools, online resources, and interactive learning platforms has not only broadened access to information but also enriched the educational experience by fostering interactive and engaging learning environments (Mishra & Koehler, 2006). Countries around the world are increasingly investing in educational technology, recognizing its potential to improve student outcomes and prepare learners for a technology-driven world (Reiser & Dempsey, 2017).

In Nigeria, the government and educational stakeholders have acknowledged the importance of incorporating technology into the educational system. Policies and initiatives such as the National Policy on Information and Communication Technology (ICT) in Education have been developed to promote the use of technology in classrooms (Federal Ministry of Education, 2019). These efforts aim to enhance the quality of education, bridge educational inequalities, and equip students with the necessary skills for the 21st century. However, the implementation and effectiveness of these initiatives vary significantly across regions and schools, often influenced by factors such as infrastructure, funding, and teacher readiness (Norris, 2001).

Edo South Senatorial District, located in Edo State, Nigeria, comprises several urban and rural areas with diverse educational challenges and opportunities. The district's secondary schools represent a microcosm of the broader Nigerian educational landscape, where disparities in access to technology and varying levels of technological integration in classrooms are evident (Adewale & Alabi, 2019). While some schools in urban areas may have access to computers, internet connectivity, and digital learning resources, many in rural areas struggle with basic infrastructure, let alone technological advancements.

The increasing significance of technology in education raises critical questions about its impact on teaching and learning, particularly in regions with uneven access to resources. This study is motivated by the need to understand how technology affects educational outcomes in Edo South Senatorial District's senior secondary schools. By examining the current state of technology use, identifying barriers and facilitators, and evaluating the impact on student learning and teacher instruction, the study seeks to provide insights that can inform policy and practice.

This research aims to bridge the gap between policy intentions and on-ground realities, contributing to a nuanced understanding of the educational landscape in Edo State. It also seeks to highlight the unique challenges and opportunities within the district, providing a foundation for targeted interventions and strategies that can enhance the effectiveness of technology in education. This study's findings will not only add to the academic discourse on educational technology in developing regions but also offer practical recommendations for stakeholders aiming to leverage technology for educational improvement in similar contexts.

* 1. **Statement of the Problem**

Despite efforts to integrate technology into education in Nigeria, significant gaps persist, especially in regions like Edo South Senatorial District. Schools in this area often face challenges such as inadequate technological infrastructure, limited internet access, and a shortage of trained teachers equipped to use technology in the classroom (Obi & Okoro, 2020). These issues contribute to a widening digital divide, which can exacerbate educational inequalities and limit students' access to quality education (Warschauer, 2004).

Research has shown that technology can enhance learning outcomes by providing access to diverse resources and enabling more interactive and personalized learning experiences. However, the specific impact of technology in Edo South Senatorial District's senior secondary schools remains under-explored. There is a need to understand how technology is being utilized in these schools, the barriers to effective implementation, and the overall impact on teaching and learning outcomes.

Studies suggest that technology can enhance learning outcomes by providing access to diverse resources and enabling more interactive and personalized learning experiences (Bloom, 1956). However, the specific impact of technology in Edo South Senatorial District's senior secondary schools remains under-explored. This study aims to address these gaps by investigating the current state of technology integration in teaching and learning within this region. Specifically, it seeks to:

* Assess the availability and accessibility of technological resources in senior secondary schools.
* Examine the preparedness and attitudes of teachers towards using technology in their teaching practices.
* Evaluate the impact of technology on student learning outcomes and engagement.

By addressing these areas, the research aims to provide valuable insights for educators, policymakers, and other stakeholders, helping them to develop strategies that can effectively integrate technology into the educational system and reduce the digital divide.

* 1. **Purpose of the Study**

The purpose of this study is to examine the impact of technology on teaching and learning in senior secondary schools in Edo South Senatorial District, Edo State. The specific objectives are as follows:

* To assess the extent to which technological resources are available and accessible in these schools.
* To investigate the preparedness and attitudes of teachers towards the use of technology in their teaching practices.
* To evaluate the impact of technology on student engagement and learning outcomes.
* To explore the challenges faced by schools in integrating technology into the educational process.
  1. **Research Questions and/or Hypotheses**

The following are research questions that this study seeks to answer:

* + To what extent are technological resources available and accessible in senior secondary schools in Edo South Senatorial District?
  + How prepared and what are the attitudes of teachers towards using technology in their teaching practices in these schools?
  + What impact does technology have on student engagement and learning outcomes in these schools?
  + What challenges do schools face in integrating technology into the educational process?

The study will test the following hypotheses:

* There is no significant difference in the availability and accessibility of technological resources among senior secondary schools in Edo South Senatorial District.
* There is no significant relationship between teacher preparedness/attitudes and the use of technology in teaching practices in these schools.
* There is no significant impact of technology on student engagement and learning outcomes in senior secondary schools in Edo South Senatorial District.
* There are no significant challenges faced by schools in integrating technology into the educational process.
  1. **Significance of the Study**

The findings of this study will be beneficial to a wide range of stakeholders in the education sector, particularly in Edo South Senatorial District and potentially beyond.

Educational Policymakers and Administrators:

* The study will provide valuable insights into the current state of technology integration in senior secondary schools. Policymakers can use this information to develop targeted policies and initiatives aimed at improving technological infrastructure and resources in schools, ensuring equitable access for all students.
* Administrators can better understand the specific challenges and needs of their schools regarding technology adoption, enabling them to allocate resources more effectively and support teachers and students in utilizing technology for educational purposes.

Teachers:

* The research will highlight the preparedness and attitudes of teachers towards using technology in the classroom. This information can inform professional development programs, helping teachers acquire the necessary skills and confidence to integrate technology into their teaching practices effectively.
* By understanding the potential benefits and challenges associated with technology use, teachers can adopt more innovative teaching strategies that enhance student engagement and learning outcomes.

Students:

* Students will benefit indirectly from the study as it aims to improve the quality of education through better integration of technology. Enhanced access to digital tools and resources can lead to more interactive and personalized learning experiences, better preparing students for the digital age.
* Understanding the impact of technology on learning outcomes can help educators tailor instructional methods to meet the diverse needs of students, thereby improving academic performance and overall educational experiences.

Parents and Guardians:

* The study's findings can help parents and guardians understand the role of technology in their children's education and encourage them to support its effective use both at home and in school. This support can enhance students' digital literacy and readiness for a technology-driven world.

Future Researches:

* This study will contribute to the existing body of knowledge on educational technology, particularly in the context of developing regions. It can serve as a reference for future research, providing a foundation for more in-depth studies on specific aspects of technology integration in education.

Community and Society:

* By promoting better integration of technology in education, the study indirectly supports community and societal development. Improved educational outcomes contribute to a more informed and skilled workforce, which is essential for economic growth and social progress.

Overall, the study aims to provide actionable insights that can lead to more effective and equitable use of technology in education, benefiting various stakeholders and contributing to the broader goal of improving the quality of education in Edo South Senatorial District and similar contexts.

* 1. **Scope of Study**

The study focuses on the impact of technology in teaching and learning within senior secondary schools. Specifically, it examines:

* + Availability and Accessibility of Technological Resources: This includes the presence of digital tools such as computers, tablets, internet connectivity, and educational software.
  + Teacher Preparedness and Attitudes: The study explores how prepared teachers are to integrate technology into their teaching practices and their attitudes towards using these tools in the classroom.
  + Impact on Student Engagement and Learning Outcomes: The research investigates how the use of technology affects student engagement, participation, and overall academic performance.
  + Challenges in Technology Integration: It identifies and analyzes the barriers that schools face in effectively incorporating technology into the educational process.

The study is geographically limited to the Edo South Senatorial District in Edo State, Nigeria. This area includes both urban and rural schools, providing a diverse context for examining the differences in technology adoption and its impact on education. The findings will be specific to this region, but they may also offer insights applicable to other similar regions within Nigeria and potentially in other developing countries facing comparable educational challenges.

* 1. **Operational Definition of Terms**
* Technology Integration

The process of incorporating digital tools and resources, such as computers, internet, and educational software, into the teaching and learning environment to enhance educational outcomes.

* Senior Secondary Schools

Educational institutions in Nigeria that provide the final three years of secondary education, typically catering to students aged 13 to 18 years. This study focuses specifically on these institutions within Edo South Senatorial District.

* Digital Divide

The gap between individuals or groups in terms of access to, use of, or knowledge about information and communication technologies (ICT). In this context, it refers to the disparities in access to technological resources between different schools and students (Norris, 2001).

* Teacher Preparedness

The readiness of teachers to effectively use technology in their teaching practices, including their knowledge, skills, and attitudes towards integrating digital tools into the classroom (Koehler & Mishra, 2009).

* Student Engagement

The level of interest, participation, and enthusiasm that students exhibit in the learning process, particularly in relation to the use of technology in educational activities.

* Learning Outcomes

The measurable academic achievements of students, including knowledge, skills, and competencies, that result from the educational process. This study focuses on how technology influences these outcomes (Bloom, 1956).

* Educational Technology

Refers to the use of digital tools and resources, such as online platforms, multimedia content, and interactive software, to support and enhance the teaching and learning process (Reiser & Dempsey, 2017).

* Empirical Studied

Research studies based on observed and measured phenomena, often involving data collection and analysis to establish evidence-based conclusions.

* Information and Communication Technology (ICT)

A broad term encompassing technologies that provide access to information and communication, including the internet, wireless networks, cell phones, and other communication mediums

* Barriers to Technology Integration

Factors that hinder the effective incorporation of technology into the educational process, such as lack of infrastructure, inadequate training, or resistance to change.

**References**

1. Adewale, S. A., & Alabi, F. O. (2019). The impact of technology integration on student academic performance in Nigerian secondary schools. *Journal of Educational Technology, 12*(3), 45-56.
2. Bloom, B. S. (1956). *Taxonomy of educational objectives: The classification of educational goals*. Longmans, Green.
3. Federal Ministry of Education. (2019). *National policy on information and communication technology in education*. Abuja, Nigeria.
4. Koehler, M. J., & Mishra, P. (2009). What is Technological Pedagogical Content Knowledge (TPACK)? *Contemporary Issues in Technology and Teacher Education,* 9(1), 60-70.
5. Mishra, P., & Koehler, M. J. (2006). Technological pedagogical content knowledge: A framework for teacher knowledge. *Teachers College Record, 108*(6), 1017-1054.
6. Norris, P. (2001). *Digital divide: Civic engagement, information poverty, and the internet worldwide*. Cambridge University Press.
7. Obi, P., & Okoro, E. (2020). Barriers to technology integration in Nigerian secondary schools: A case study of Edo South Senatorial District. *African Journal of Education, 24*(4), 89-104.
8. Reiser, R. A., & Dempsey, J. V. (2017). *Trends and issues in instructional design and technology* (4th ed.). Pearson.
9. Schlechty, P. C. (2011). *Engaging students: The next level of working on the work*. Jossey-Bass.
10. Warschauer, M. (2004). *Technology and social inclusion: Rethinking the digital divide*. MIT Press.