

**INVESTIGATING THE IMPACT OF TECHNOLOGY ON ACADEMIC  
DEVELOPMENT AMONG PRE SCHOOL CHILDREN IN OREDO  
LOCAL GOVERNMENT AREA, EDO STATE.**

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BENIN CITY**

**MAY, 2024.**

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**A RESEARCH PROJECT WRITTEN IN THE INSTITUTE OF  
EDUCATION, UNIVERSITY OF BENIN, BENIN CITY. IN PARTIAL  
FULFILLMENT OF THE REQUIREMENTS FOR THE AWARD OF A  
BACHELOR'S DEGREE IN EARLY CHILDHOOD EDUCATION (B.ED  
EARLY CHILDHOOD EDUCATION)**

**MAY, 2024**

## CERTIFICATION

We, the undersigned, certify that this study was carried out by EGBA HOSSANA OGBENE, with the matriculation number EDU1903812 of the Institute of Education, University of Benin City in Edo State, Nigeria. In partial fulfillment of the requirements for the award of B.Ed. Degree in Early Childhood Education.

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## **DEDICATION**

This project is dedicated to God almighty, my source and strength in the successful completion of this project despite the difficulties. To my wonderful and amazing parent, Mr. and Mrs. Egba for their dedication, encouragement and endless support to me.

## ACKNOWLEDGMENTS

I would like to express my profound gratitude to God Almighty for providing the enabling conditions to successfully complete this research work. I wish to express my gratitude to my supervisor Prof. K. Aluko for his meticulous supervisory guidance while this research was in progress. His intellectual prowess is most gratefully acknowledged.

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## ABSTRACT

The research work investigated the impact of technology on academic development among pre school children in Oredo Local Government Area of Edo State. To guide this study four research questions were raised: What is the status of technology in the schools, what is the attitude of teachers to the use of technology, will the use of technology in early childhood education improve learning, will the use of interactive digital tools affect the social and emotional development of pre school children. descriptive survey research was adopted with the use of questionnaire to collect information from the respondents. The population of the study was two hundred and ten (210) private pre schools in Oredo Local Government Area. The sample size used for the study was 25% of the total population. ballot method was used to draw the sample in each school selected, twelve (12) private schools was selected and visited in Oredo Local Government Area. Ten (10) subjects from these schools was drawn through purposive sampling technique giving a total number of one hundred and twenty (120) subject . The research instrument used in this study was a structured questionnaire titled Investigating the impact of technology on academic development among pre school children. It was divided into two sections: section A sought to elicit information about the bio-data of the respondents, while section B was on the Investigating the impact of technology on academic development among pre school children in Oredo Local Government Area, Benin, Edo state. This section consists of sixteen (16) items. The likert scale of four points was used, SA-4, A-3, D-2, SD-1 points respectively was used for the study. The reliability of the instrument was carried out using test re-test method which gave the reliability score of 0.70. The data collected through the questionnaire was analyzed by the researcher using the simple percentage, frequency count, mean, standard deviation to interpret the result for the various findings and questions listed in the study. The study concluded that it is important that teachers beliefs, roles and experiences are considered, if changes are to be made to foster and optimize opportunities for young children's learning and how the roles and experiences influence and shape the ways in which teachers implement and integrate technology among pre school children context. The study also reveals the positive impact of technology and how it makes learning more fun and also helps in enhancing children engagement in the classroom and also the negative impact of technology on pre school children if not handled well. Findings revealed that technology have significant impact in children learning outcome, based on the findings it was recommended that researchers and educators should encourage the use of technology in ECE from the perspectives of children and families, technological resources center should be established in various early childhood education centers in Oredo Local Government Area of Edo State.

## **CHAPTER ONE**

### **INTRODUCTION**

#### **BACKGROUND OF THE STUDY**

As technology has advanced, the world has changed quickly. Without a question, communication technology of today has made the world a "global village." With the use of information and communication technology (ICTs), the world of today is celebrating technological advancements that have expanded the reach of communication. As it stands, however, technology possesses both terrible and beneficial aspects, much like a coin. It aids in people becoming more enlightened, knowledgeable, and up to date with global developments. Technology makes improved methods of doing things available to humanity. Technology is now the best tool for exploring the vast field of information as a result of this.

According to Lynch and Warner (2004), there is debate surrounding the use of technology in early childhood education (ECE), particularly the use of computers. Computer use in preschools has both benefits and drawbacks. Though some educators (Elkind 1998, Haugland 1999) contend that computers and other technological tools, like projectors and cameras, are not developmentally appropriate for kids under three, even young kids can gain from technology if it is used purposefully and in ways that are

appropriate for their developmental stage (Parikhi 2012). Children are accustomed to interacting with technology items on a regular basis, according to Scoter, Ellis, and Railsback (2001). Children are familiar with and have access to a wide variety of technical devices, including video games, laptops, cameras, cellular phones, and televisions. The use of technology in modern life is so pervasive that removing it from children's education is weird. To become engaged citizens of the digital age, children should be given all the information and experiences they need. Both the possible advantages and potential threats associated with technology should be understood by children (Funnell 2011).

Communication education involves preparing students to be specialists in their field and fostering a relationship between the student or learner and the transmitter, who is the instructor and is responsible for imparting media and communication skills.

The formal education that is required for final certification and follows a defined curriculum is acquired through learning activities carried out in a school, university, or other organised institution under the guidance of experts.

Informal education can be characterised as educational activities that occur in a social setting outside of the traditional educational framework, such as extracurricular activities in clubs and groups, and sometimes without a specific objective in mind.

Outside of the classroom, non-formal education encompasses a collection of skills and information that can be either non-instructive or educative. It is described as being haphazard, perhaps even sporadic, and occasionally occurring without an educational goal.

According to Neueanu P. (1979), education is a social phenomena that involves the training, development, and creation of individuals as subjects of action, knowledge, and values through practice, communication, and modelling of behaviour as well as integration into the commercial and social spheres.

A person's placement, whether in an academic setting or in a job, is significantly influenced by their academic growth and quality. As a result, a lot of people are worried about how to improve their academic performance.

The impact of early childhood education on the intellectual growth of future generations is something we cannot undervalue. According to UNESCO, a person's brain develops most during the first eight years of life, hence they support early education that fosters good health, a balanced diet, and overall development. According to studies, kids who watch instructional television benefit in a number of ways, including better social skills development, increased cognitive ability, and better school readiness. the cutting-edge

social media approach to early childhood education that uses radio, books, live action plays, and television to teach kids valuable lessons.

Early childhood education is described on Wikipedia as the area of education philosophy that deals with teaching young children both formally and informally up until the age of eight or so. Children from birth to age two (0-2 years) are considered to be enrolled in infant/toddler education, which is a subset of early childhood education. Maria Montessori (1870–1952) held the opinion that learning occurs when children move, use their senses, and complete an activity that involves those senses. Young children who play in groups benefit from having more empathy for one another.

However, play has begun to disappear as a result of technological advancements, and now it is referred to as "playing" via technology. A balanced media diet is necessary for the development of multiple skills. In terms of the abilities that each media develops, each has advantages and disadvantages. Play has started to get influenced by technology, therefore it's important to strike a balance.

## **STATEMENT OF THE PROBLEM**

Given the growing influence of technology on our daily lives, it is critical to comprehend the potential effects of integrating it into early childhood education on the

social, cognitive, and academic development of young students. In addition to offering guidance and recommendations for parents and teachers on how to best integrate technology into the classroom while promoting the best possible academic development for young children, the purpose of this study is to investigate the possible advantages and disadvantages of technology in pre-school settings.

It seeks to determine whether technology has a beneficial or detrimental impact on students' academic development. The main goal is to comprehend the connection between early technological exposure and academic achievement.

### **PURPOSE OF THE STUDY**

The study's goal is to investigate how technology affects young children's academic development in order to offer parents and teachers guidance on how to maintain a healthy and productive learning environment for their young charges. More precisely, the research aims to:

1. To find out how technology affects the learning and development of young children in preschool.
2. To list the advantages and disadvantages of integrating technology into preschool instruction.

3. To offer parents and educators advice on how to integrate technology in the classroom effectively.
4. To advance our understanding of this subject.

## **RESEARCH QUESTIONS**

The following research questions were raised:

1. What is the status of technology in the schools?
2. What is the attitude of teachers to the use of technology?
3. Will the use of technology in early childhood education improve learning?
4. Will the use of interactive digital tools affect the social and emotional development of pre-school children?

## **SIGNIFICANCE OF THE STUDY**

The study's importance stems from its capacity to enhance our comprehension of how technology affects the learning and growth of preschoolers. By investigating the use of technology in early childhood education, we may learn about the advantages and disadvantages of it, improve teaching methods, and offer parents and teachers advice.

The results of this study can be used to design evidence-based strategies that will improve early childhood education and promote young learners' holistic development.

This study can also clarify how technology can help to advance inclusive education. It can look at how different learners like those with unique learning preferences or special needs can be supported by technology. Recognising this can facilitate the development of inclusive and fair learning environments.

The results of this study can also be used to improve teacher preparation programmes and curriculum development. By figuring out the best ways to incorporate technology into the classroom, we can provide teachers the information and abilities they need to use technology as a tool for interesting and productive lessons. The study's overall significance stems from its potential to influence educational practices, enhance learning results, and guarantee that preschool instruction is adaptable to the needs of modern learners.

### **SCOPE OF THE STUDY**

The study's objective is to investigate the effects of technology use on young learners in pre-school settings.

### **LIMITATION TO THE STUDY**

The Oredo Local Government Area, Benin City, Edo State, private pre-primary schools are the only ones included in this study.

## **DEFINITION OF TERMS**

Some terminology used in this study are defined below for the sake of comprehension and clarity, along with the context in which they were used.

**TECHNOLOGY:** The tools, gadgets, and systems designed to simplify our lives are referred to as technology. It covers a wide range of items, including computers, smartphones, the internet, and much more.

**EDUCATION:** The process of gaining knowledge, skills, values, and attitudes via instruction, training, and experience is known as education. It assists people in growing their mental, emotional, and social capacities, setting them up for success and difficulties in the future. Both formal, like schools, and informal, like real-world encounters, can be used for education.

## **CHAPTER TWO**

### **LITERATURE REVIEW**

A variety of scholarly works have been examined to support this investigation. The following topics were looked at and reviewed in this chapter:

- The concept of Technology
- Important of studying the impact of technology on academic development among pre school children.
- The role of parental involvement in shaping pre schoolers technology use and it's impact on academic development.
- The positive impact of technology on academic development among pre school students.
- Potential risks and challenges of technology on pre school children and it's effect on their academic development.
- Strategies for effective and responsible use of technology in pre school education
- Summary of literature reviewed

#### **THE CONCEPT OF TECHNOLOGY**

Preschoolers now live in a world where technology is omnipresent. Technology has become a standard tool in early childhood education, ranging from tablets and smart

phones to interactive learning apps and instructional videos. Interest in learning more about how technology affects toddlers' intellectual development has grown as a result of its increasing prevalence.

When we discuss technology in today's world, we usually think of smart appliances, TVs, tablets, and smartphones. A definition of technology is necessary in order to examine the benefits and drawbacks of implementing it in early childhood education. The Greek phrase *tekhne*, which is composed of the words "tekhne" and "logia," is where the word "technology" first appeared, according to Tulley. The word *logos* signifies reason, while the word *tekhne* indicates art, craft, or talent. Though the word is relatively new, its roots can be found in Greek. The term "technology" did not first emerge in literature until the latter half of the 20th century, and it wasn't until 1974 that it made a significant inclusion in the *Britannica Encyclopaedia*. The word technology was rarely used in literature before the 1900s, but it was accepted as a substitute for the word *technica* in the 11th and 13th editions (Nightingale, 2014.2).

Alternative definitions of technology exist. Gregersen defines it as "the utilization of scientific knowledge for practical human purposes, aimed at modifying and managing our surroundings" (2020).

The Collins Dictionary describes technology as "methods, systems, and devices stemming from the practical application of scientific knowledge" (2022). These definitions suggest that technology can serve as an instrument that simplifies tasks. Technology has a long history, dating back to the Stone Age when stone implements were employed to facilitate tasks like cutting (Khan Academy, 2020). The term "technology" encompasses a wide range of entities. Ari Alamaki astutely observes that "the domain of technology is vast; categorizing particular goods as technology is akin to classifying trees and birds as biology" (1999).

Within the context of this thesis, "technology" will exclusively denote digital technology and electronic devices such as smartphones, tablets, their accompanying apps and software, as well as laptops and desktop computers.

### **National Finnish Curriculum in early Years Education and technology**

The Finnish National Basic Curriculum for Early Childhood Education and Care 2018 holds the use of technology as an indispensable facet of its educational program. Falling under the curriculum's multi-literacy learning domains, technology assumes a position as an inherent component of children's and families' daily experiences. It is the responsibility of early childhood education and care to cultivate children's proficiencies

in utilizing information technology. Furthermore, the National Basic Curriculum for Early Childhood Education and Care explicitly mandates that daycare personnel have the duty to mentor children in the dynamic and secure utilization of information and communication technology (ICT) (2018). In Finland, daycare providers are bound to adhere to the National Basic Curriculum for Early Childhood Education and Care. Thus, daycare providers are compelled to integrate technology into the educational curriculum (Finnish National Agency for Education, 2018). It follows that the National Basic Curriculum for Early Childhood Education and Care 2018 evidently espouses the imperative for children to acquire technological literacy and provides avenues for children to wield technology in Early Childhood Education and Care settings. The implementation of this curriculum requires the presence of daycare personnel to shepherd the children, guaranteeing the secure and versatile use of technology. The curriculum offers guidance on the integration of technology into daycare curriculums by illuminating the applications of ICT in children's quotidian lives and enabling them to acquaint themselves with diverse devices, games, and services. Technology can be leveraged in physical activities, artistic experiences and productions, and experimentation, production, and innovation, thus fostering creative thinking and honing social skills and literacy (Finnish National Agency for Education, 2019).

Aligned with the guidelines stipulated within the notional curriculum, Hietoronto posits a set of methods and suggestions that empower childcare providers to seamlessly integrate technology into their doily operations. Hietoronto pinpoints two pivotal obstacles encountered by professionals that hinder the successful adoption of technology. These hurdles include the lack of dedicated time invested in fully leveraging the potential benefits of technology and a perceived reluctance among professionals to commit the necessary effort and resources to incorporate technology into the educational experiences of children. Hietoronto underscores that upon successfully addressing these obstacles, technology offers a wealth of possibilities to enhance the learning journey and render the weekly routine more engaging for children. Furthermore, technology grants children the opportunity to acquire knowledge and skills that might otherwise remain inaccessible. Hietoronto's work presents a diverse array of practical ideas and activities tailored to the unique needs of childcare professionals (2017).

### **Technology in daycare**

Research conducted by Pekka Mertala in 2020 indicated that age significantly influences the opinions of daycare teachers-in-training regarding the integration of technology in early childhood education.

Educators recognized a heightened need for personalized care among children between 0 and 2 years of age, deeming the use of technology unnecessary within this demographic. Conversely, preservice daycare teachers expressed greater acceptance of technology for preschoolers around 6 years of age.

The perspectives of the teachers in Mertala's study align with Abraham Maslow's Hierarchy of Needs theory. Maslow theorized that children must have their basic developmental requirements fulfilled before progressing to subsequent levels (McLeod, 2007).

Jean Piaget's theory of cognitive development further corroborates this notion, asserting that children under 30 months lack the cognitive maturity to acquire new knowledge solely through screen-based media (McLeod, 2006). The child's conceptual understanding is insufficiently developed to apply the knowledge gained from a screen to real-world scenarios.

The concern of pre-service teachers regarding the amount of time children spend using technology was one of the issues brought to light in Mertala's findings. According to several of the responders, kids use technology frequently, and sometimes even too much. It was also revealed by the data that pre-service teachers believed that children should

play in conventional ways outside in order to develop their creativity, social skills, and physical mobility.

According to Alan (1990), technology is anything that wasn't around when you were born.

According to Douglas Adams, Author, (1999), technology is a word that describes something that doesn't work yet.

Laurie Anderson, Artist, (2004), refers to technology as the campfire around which we tell our stories.

According to Danny (1998) technology is a word that describes the things that don't work yet.

Steve jobs, Co-founder of Apple, (2007) refers to technology as anything that makes our lives easier, more convenient, and more connected.

Technology, as defined by the Oxford Dictionary, is the practical application of scientific knowledge, particularly in industry.

## **IMPORTANCE OF STUDYING THE IMPACT OF TECHNOLOGY ON ACADEMIC DEVELOPMENT AMONG PRE SCHOOL CHILDREN**

Because it enables us to better understand how technology can effect children's learning and development, research on how it affects preschoolers' academic development is

crucial. It makes it possible for us to recognise early on the advantages and possible drawbacks of technology use. We may choose the ideal way to use technology in their education to make sure it improves their learning experiences and advances their general development by researching this influence.

It is essential to research how technology affects preschoolers' academic development because it gives us more insight into how technology can influence their educational experiences. We can learn more about the possible advantages and disadvantages of technology use at such a young age by performing study and analysis. Making educated judgements about how to integrate technology in a way that optimises its beneficial impacts is made easier for educators and parents when they are aware of the effects technology has on academic growth. It makes it possible for us to determine which educational applications, programmes, or gadgets are the most useful and entertaining for advancing kids' social, language, and cognitive development.

Studying this influence also enables us to handle any possible dangers or difficulties related to the usage of technology. It assists us in making sure kids don't rely too much on technology for their education and yet have lots of chances to engage in practical, interactive, and artistic activities that develop social, critical thinking, and problem-solving abilities.

We can design a balanced and comprehensive approach to early childhood education that will both harness the advantages of technology and foster the general growth and development of preschoolers by looking at how it affects their intellectual development. It all comes down to striking the correct balance and making sure that technology is a tool that helps them on their educational path.

The following are some of the main reasons it's important to research how technology affects preschoolers' intellectual development:

1. **Enhancing learning experiences:** Comprehending the impact of technology on the academic growth of preschoolers aids in the creation and utilisation of educational materials and technologies that enhance the effectiveness, interactivity, and engagement of learning. It enables us to produce digital content that is suitable for their age and meets their developmental needs.
2. **Personalized learning:** Through examining the effects of technology, we can find strategies to customise learning opportunities to meet the unique requirements and learning preferences of preschoolers. Personalised learning paths, flexible evaluations, and focused treatments that address their particular needs and talents can all be facilitated by technology.

3. Cognitive development: Studying how technology affects education enables us to understand how digital tools can foster cognitive abilities like creativity, critical thinking, and problem-solving. It makes it possible to use technology in a way that develops cognitive growth and gets kids ready for success in school later on.
4. Digital literacy skills: Preschoolers can develop digital literacy abilities by being exposed to technology early on. We can learn how to help students navigate digital interfaces, appropriately obtain information, and build a solid understanding of technology—all of which will become more and more crucial in their lives—by researching the effects.
5. Identifying potential risks: By researching the effects of technology, we can recognise and reduce the risks that may arise from excessive screen time, improper content, or a lack of social interaction. It assists us in creating policies and best practices to guarantee that young learners' use of technology is secure, sensible, and advantageous.

By researching how technology affects preschoolers' academic growth, we can maximise their learning potential, give them the tools they need to succeed in the digital age, and guarantee a safe and comprehensive education.

## **THE ROLE OF PARENTAL INVOLVEMENT IN SHAPING PRE SCHOOLERS TECHNOLOGY USE AND IT'S IMPACT ON ACADEMIC DEVELOPMENT**

It is imperative for preschoolers' academic development that parents play a role in influencing their use of technology. Studies have indicated that when parents actively participate with their kids when they use technology, it improves the learning process. This may entail talking about the subject, posing queries, and offering advice. Setting reasonable screen time limits and choosing top-notch educational apps are two more areas where parental involvement can be helpful.

According to studies, parents who use technology responsibly and purposefully themselves have a good impact on their children's attitudes and behaviours about it. Parents can make sure that their children's technology use is in line with their academic objectives by actively participating in it and keeping an eye on it.

The way that toddlers utilise technology and how that use affects their intellectual development is greatly influenced by parental participation. The learning process is improved when parents actively interact with their kids when they are using technology. This may entail talking about the subject, posing queries, and offering advice. Parents who are involved can make sure that their child's usage of technology helps their learning and is in line with educational objectives.

In addition, parental engagement involves the selection of superior educational applications and the establishment of suitable screen time limitations. Parents can optimise the advantages of technology use by selecting apps that are in line with educational objectives and appropriate for their child's age. Limiting screen time contributes to keeping a good balance between using technology and other activities.

It's crucial that parents set an example for their children by using technology sensibly and intentionally. Children's attitudes and behaviours towards technology are positively influenced when they witness their parents utilising it appropriately. Preschool parents can foster a constructive and advantageous relationship between their children and technology by actively participating in their children's use of technology and keeping an eye on it.

## **THE POSITIVE IMPACT OF TECHNOLOGY ON ACADEMIC DEVELOPMENT AMONG PRE SCHOOL STUDENTS**

Preschool education with technology can yield some amazing advantages. It can aid in the development of critical thinking, creativity, and problem-solving abilities in children.

Learning is also enjoyable thanks to instructional games and interactive apps.

Yes, of course! An extensive assessment of the literature on how technology affects toddlers' intellectual development is provided here:

- Studies have indicated that the integration of educational applications into preschool curriculum can enhance the learning outcomes of young children. These apps frequently make use of interesting and interactive aspects that draw in kids and improve their cognitive abilities. Through interactive games and activities, educational applications, for instance, can support toddlers in developing early literacy and numeracy abilities. They can also foster creativity, critical thinking, and problem-solving skills.
- In early childhood education, there are advantages and disadvantages to using tablets or PCs. The good news is that a variety of instructional content, such as interactive learning resources, films, and digital books, can be accessed through these gadgets. Kids' motivation, engagement, and self-directed learning can all be improved by them. Personalised learning experiences can be facilitated by tablets and laptops, enabling kids to advance at their own speed. Preschoolers' academic development can benefit from the following good effects of technology:
  1. Interactive Learning: For young children, technology offers fascinating and interactive learning opportunities. Children can remain actively involved in

the learning process by using educational apps, games, and digital tools to make learning more enjoyable and engaging.

2. **Skill Development:** Preschoolers get a variety of abilities from using technology. Through activities like touch screen interactions, puzzles, and tablet painting, they can improve their cognitive capacities, problem-solving skills, hand-eye coordination, and fine motor capabilities.
3. **Personalized Learning:** The use of technology makes individualised education possible. Children can work at their own pace on adaptable learning platforms, concentrating on areas that require more experience or challenge. This customised method encourages efficient learning.
4. **Access to Information:** Many resources and a plethora of knowledge are accessible thanks to technology. With the help of age-appropriate websites, movies, and interactive content, preschoolers may learn new ideas, investigate a variety of topics, and expand their knowledge.
5. **Creativity and Expression:** There are many tools available in technology for artistic expression. Youngsters can express their ideas, inventiveness, and creativity with multimedia tools, digital art apps, and narrative apps. Their capacity for artistic expression is cultivated as a result.

6. Collaboration and Communication: Preschoolers can work together and interact with classmates, teachers, and even kids from around the globe thanks to technology. They can participate in online group projects, video chats, and virtual classes to hone their social and communication skills.
7. Preparation for the Digital World: Preschoolers benefit from the introduction of technology as it helps them get ready for the future digital environment. Early exposure to technology aids in the development of children's digital literacy, flexibility, and self-assurance when utilising digital technologies.

Multimodal Learning: There are several ways to learn using technology, such as tactile, auditory, and visual. On iPads or PCs, preschoolers can participate in interactive graphics, instructional movies, and hands-on activities. This multimodal method improves comprehension and retention while accommodating various learning preferences.

Parent Involvement: Parental involvement in their child's academic growth can be facilitated by technology. Using educational applications or websites, parents can interact with teachers, view online progress reports, and carry out at-home learning activities. This engagement enhances the relationship between parents, kids, and teachers.

## **POTENTIAL RISKS AND CHALLENGES OF TECHNOLOGY ON PRE SCHOOL CHILDREN AND IT'S EFFECT ON THEIR ACADEMIC DEVELOPMENT**

Today's youngsters are constantly surrounded by technology, from TV and tablet-based toys to smartphones and social media. Since they will be using computers for the rest of their lives, it is crucial that kids and teenagers learn how to use technology, yet using it excessively can have negative physical and health repercussions. The detrimental impacts on kids' health range from a higher chance of obesity to behavioural issues, social skill loss, and loss. Naturally, this doesn't mean parents should forbid technology completely, but it is crucial for parents to understand the possible negative impacts technology may have on their kids and to come up with plans to reduce the amount of time they spend in front of screens.

Although there are numerous advantages for preschoolers' intellectual development when it comes to technology, there are also risks and difficulties to be mindful of. Here are a few things to think about:

1. **Screen Time and Sedentary Behavior:** Overindulgence in screens can result in sedentary behaviour, which can harm kids' physical growth and health. It's critical

to strike a balance between screen time and other pursuits that encourage movement and social contact.

2. **Developmental Concerns:** Concerns over technology's possible effects on kids' social, emotional, and cognitive development are voiced by certain specialists. The development of critical abilities including self-control, communication, and problem-solving can be hampered by excessive use or inappropriate content.
3. **Distraction and Lack of Focus:** Due to its high levels of stimulation, technology can shorten attention spans and make it harder to concentrate on tasks that require offline activity. A child's capacity to focus in class and participate in other learning activities may be impacted by this.
4. **Privacy and Security:** Children's personal information may be collected by online platforms and apps, which raises privacy and security concerns. It is imperative that parents and educators exercise caution when choosing and supervising the technology their children use, making sure it complies with stringent privacy and security regulations.
5. **Inequality and Access:** A digital divide may arise from the fact that certain kids do not have equal access to technology. Preschoolers who have limited access to technology may not have equal opportunity for academic growth and learning.

6. **Over reliance on Technology:** Over-reliance on technology might prevent kids from participating in other kinds of learning activities, like social connections, outdoor play, and hands-on activities. Offering a well-rounded strategy that takes into account different learning modes is crucial.
7. **Content Quality and Appropriateness:** Certain digital content might not be appropriate for young children in preschool; not all of it is made equal. It is imperative that parents and educators assess the technology and content their children interact with carefully in terms of its quality, appropriateness, and educational usefulness.

It's critical to create rules for technology use, place restrictions on screen time, choose age-and subject-appropriate educational content, and create a well-rounded learning environment with offline activities in order to reduce these risks and difficulties. Preschoolers should use technology in a healthy and balanced way, which requires regular communication and interaction from parents and educators.

## **STRATEGIES FOR EFFECTIVE AND RESPONSIBLE USE OF TECHNOLOGY IN PRE SCHOOL EDUCATION**

It's critical to have policies in place to guarantee that the use of technology in preschool education is both responsible and successful. When deciding what, how, and when to

use technology with young children, these strategies support educators in making well-informed judgements. By implementing these techniques, we may construct a well-rounded and stimulating learning environment that takes into account preschoolers' developmental requirements as well as their well-being, while also making the most of technology.

The following are some methods for using technology in preschool education in an efficient and ethical manner:

1. **Set Clear Guidelines:** Define boundaries and guidelines for the use of technology in the classroom, including acceptable content and specific times for technology-related activities.
2. **Select age-appropriate content:** Select educational websites, applications, and programmes that are tailored to the requirements and interests of preschoolers and are especially made for them.
3. **Monitor and supervise:** Make sure kids are learning, participating, and using technology appropriately by regularly watching and interacting with them while they use it.

4. Balance screen time: Promote striking a balance between using technology and engaging in other activities including socialising, hands-on play, and outdoor exploration.
5. Promote interactive and collaborative use: Urge kids to utilise technology to solve problems together, communicate, and collaborate. Encourage opportunities for peer engagement and cooperative learning.
6. Integrate technology with other learning experiences: Instead of replacing other learning methods with technology, use it as an addition to them. Include technology in a curriculum that is well-rounded and incorporates art, music, physical play, and interactive activities.
7. Foster digital citizenship: Instruct kids on appropriate online conduct, including being considerate of others' privacy, utilising technology sensibly, and being polite on the internet. Talk about the value of protecting personal information online and internet safety.
8. Involve parents: Inform parents about how technology is used in the school and give them tools and advice on how to use technology responsibly at home. Parents should be encouraged to participate fully in their children's technological experiences.

To guarantee the efficacy and responsible use of technology in preschool education, these tactics should be tailored to the unique needs and developmental stages of the preschoolers. Regular evaluation and adjustment should also be carried out.

## **SUMMARY OF THE LITERATURE REVIEW**

This survey of the literature has illustrated the notion and history of technology. The use of instruments, gadgets, and systems intended to make a variety of chores and activities easier is referred to as technology.

It has been shown that the proper use of technology can positively influence the learning and development of young children. It can pique their interest and increase their level of participation, which will make learning more fun and engaging. Preschoolers can investigate a variety of topics, hone their problem-solving abilities, and expand their creativity with the help of educational apps, interactive websites, and other digital resources.

But it's vital to remember that the calibre of the material matters most. Technology must provide educational and age-appropriate content if it is to really help kids' learning. Maintaining a healthy balance between using technology and other activities, like socialising and hands-on play, is also crucial. Rather than taking the place of

conventional teaching techniques, technology should enrich and supplement education as a whole.

There are several tactics that instructors might employ to guarantee appropriate technology use. Establishing boundaries and encouraging responsible behaviour, for example, can be achieved by clearly defining the rules and norms for using technology. Ensuring the appropriate and safe use of technology by children can be achieved through constant observation and supervision. Social and communication skills are enhanced when technology is used to promote engagement and teamwork. Teaching kids about digital citizenship also helps them learn how to behave politely and responsibly online.

Through the application of these principles, educators can establish a comprehensive and efficient learning environment that capitalises on the advantages of technology while taking into account the developmental requirements of preschoolers. Striking the correct balance is key to utilising technology as a tool to improve educational opportunities.

All things considered, when utilised carefully and intentionally, technology can be a useful tool in pre-school teaching.

## **CHAPTER THREE**

### **RESEARCH METHODOLOGY**

This chapter is discussed under the following sub-headings:

- Research design
- Population of the study
- Sample and sampling techniques
- Research instrument
- Validity of instrument
- Reliability of research instrument
- Method of data collection
- Method of data analysis

#### **RESEARCH DESIGN**

The present study employs a descriptive survey research approach to examine the influence of technology on the academic growth of preschool-aged children residing in the Oredo Local Government Area in Edo State.

## **POPULATION OF THE STUDY**

The study's population comprises all the educators working in private early childhood education facilities located in the Oredo Local Government Area in Benin City, Edo state.

## **SAMPLE AND SAMPLING TECHNIQUES**

In the Oredo Local Government Area, there are over two hundred and ten (210) private preschools. Of which 25% were put to use. The sample was drawn at each of the chosen schools using the ballot technique. Twelve (12) private schools in the Oredo Local Government Area were chosen and visited. Using a purposive sample technique, ten (10) subjects from these schools were chosen, for a total of one hundred and twenty (120) subjects.

## **RESEARCH INSTRUMENT**

Using a structured questionnaire with the title Investigating the impact of technology on academic development among pre-school children, the study employed two sections as its research instrument. Part B of the study examined the effects of technology on the academic development of preschoolers in Oredo Local Government Area, Benin, Edo state, whereas Section A aimed to gather information about the biographical details of the respondents. Investigating the effects of technology on preschoolers' intellectual

development is the subject of sixteen (16) topics in this section. For the study, a four-point Likert scale with the items SA-4, A-3, D-2, and SD-1 points each was employed.

### **VALIDITY OF THE INSTRUMENT**

The study supervisor and two additional measurement and assessment specialists determined the validity of the instrument in terms of item relevance to the research questions, coverage of content, proper language, and lucidity of presentation. The supervisor and the experts made the necessary modifications to the questionnaire before it was approved for use in the study.

### **RELIABILITY OF THE INSTRUMENT**

When something consistently produces the same outcome, it is said to be reliable. Test-retest methodology was employed to assess the instrument's reliability. Twelve early learning centres from the Oredo Local Government in the state of Edo were chosen to receive the tool.

The identical instrument was given again to the same respondents after a two-week period. Once the reliability estimate process utilising the Pearson Product Moment Correlation Coefficient (PPMCC) was applied, the two scores were correlated, and the final study result showed 0.70.

## **METHOD OF DATA COLLECTION**

The researcher gave the questionnaire to each teacher in the school individually, and they completed it and immediately handed it back to her. The researcher was able to collect a larger number of questionnaires because to the personal delivery of the surveys. The researcher obtained all of the completed questionnaires from the respondents after they had been distributed.

## **METHOD OF DATA ANALYSIS**

The researcher will use basic percentage analysis and frequency counting to evaluate the data obtained from the questionnaire and interpret the results for the numerous questions and conclusions outlined in the study.

## CHAPTER FOUR

### DATA ANALYSIS, PRESENTATION AND DISCUSSION OF FINDINGS

#### DATA ANALYSIS

The study's results were given in this chapter, along with a discussion of the conclusions drawn from the analysis.

A straightforward percentage data analysis approach was used to assess the collected data for acceptability. In order to gather data for the investigation of the impact of technology on the academic development of preschoolers in the Oredo Local Government Area of Edo State, a total of one hundred and twenty (120) questionnaires were distributed.

#### Research Question 1:

What is the status of technology in the schools?

**Table 1: The Status of Technology in the Schools**

Statement	Mean	Standard Deviation	Remarks
Interactive digital tools help children learn better	3.67	0.47	Agree
Technology enhances student engagement and participation in the classroom	3.60	0.54	Agree
Technology makes learning more fun	3.66	0.60	Agree
Technology has a positive impact on the learning experience in schools	3.75	0.45	Agree

Table 1 demonstrates the consensus among respondents about the benefits of interactive digital tools for children's learning, how technology improves student participation and engagement in the classroom, how much fun learning can be, and how technology generally enhances the educational experience in schools.

**Research Question 2:**

What is the attitude of teachers to the use of technology?

**Table 2: The Attitude of Teachers to the Use of Technology**

Statement	Mean	Standard Deviation	Remarks
Technology enhances the learning experience for students	3.72	0.45	Agree
Technology should play a larger role in education	3.40	0.60	Agree
Using technology as a teaching tool is very comfortable	3.51	0.60	Agree
Technology help address the individual needs of children	3.36	0.82	Agree
Grand Mean	13.96	1.67	

Table 2 reveals that the respondents believed that technology should have a bigger role in education, that it improves students' learning experiences, that it is highly pleasant to use technology as a teaching tool, and that it helps meet the needs of individual students.

Teachers' attitudes towards the use of technology were positive, as seen by the grand mean of 13.96.

**Research Question 3:**

Will the use of technology in early childhood education improve learning?

**Table 3: The Use of Technology in Early Childhood Education Improve Learning**

Statement	Mean	Standard Deviation	Remarks
Children's drive to study and level of engagement can both be increased by using digital storytelling tools into early childhood education.	3.58	0.53	Agree
For young children, interactive whiteboards offer a more customised and engaging learning environment.	3.44	0.58	Agree
The learning results of young students can benefit from the usage of tablets in early childhood education.	3.37	0.66	Agree
Technology provides valuable opportunities for children to practice critical thinking and improve their learning abilities in pre-school children	3.53	0.55	Agree

Table 3 indicates that the respondents held the belief that digital storytelling tools incorporated into early childhood education can enhance children's interest and enthusiasm for learning, that interactive whiteboards offer a tailored and engaging

learning experience for young children, that tablets can positively influence educational outcomes in early childhood education, and that technology presents significant opportunities for children to exercise critical thinking and advance their cognitive skills in preschool settings.

**Research Question 4:**

Will the use of interactive digital tools affect the social and emotional development of preschool children?

**Table 4: The Use of Interactive Digital Tools and the Social-Emotional Development of Preschool Children**

Statement	Mean	Standard Deviation	Remarks
Leveraging digital storytelling formats can potentially foster positive outcomes in the social and emotional growth of young learners attending preschool.	3.48	0.60	Agree
Interactive whiteboard can enhance children's social skills and emotional awareness in a preschool setting	3.39	0.66	Agree
Integration of tablets is necessary for promoting healthy social and emotional development in preschool children	3.44	0.69	Agree
Virtual classroom can enhance children's social skills and emotional awareness in a pre-school setting	3.35	0.66	Agree

Table 4 indicates that the respondents concur that employing digital story books exerts a favorable influence on the social and emotional maturation of preschoolers, interactive whiteboards foster children's social abilities and emotional acuity within a preschool environment, tablet integration is imperative for encouraging robust social and emotional development in preschoolers, and virtual classrooms augment children's social skills and emotional awareness in a preschool context.

## **DISCUSSION OF FINDINGS**

Table 1's results demonstrated how interactive digital tools improve children's learning. This aligns with Seymour Papert's viewpoint. According to him, computers and other forms of technology can enable students to take charge of their education and conduct more individualised idea exploration.

The study also found that using technology in the classroom increases student involvement and adds to the enjoyment of learning. In keeping with John Dewey's belief that technology may improve student learning and engagement in the classroom, it was also mentioned that technology has a favourable effect on educational experiences. He believed that technology, when used properly, can provide interactive and hands-on learning experiences for students. This findings is also in agreement with my literature

review in chapter two (2) under the positive impact of technology among pre school children which said interactive digital tools helps children learn fast and technology makes learning more fun.

The result in table 2 shows that technology plays a larger role in education and that using technology as a teaching tool is very comfortable. This is in agreement with Marc Prensky, who introduced the concept of "digital natives" and advocated for integrating technology into education to better engage students. This is also in agreement with my literature review in chapter two (2) which agrees that using technology is very comfortable and technology also helps in addressing the individual needs of children.

The result in table 3 shows that technology provides valuable opportunities for children to practice critical thinking and improve their learning abilities. This aligns with the viewpoint of Neil Postman, who highlighted the significance of utilising technology in a deliberate and significant manner to augment the educational process. According to Dewey, Kurt, and Piaget, learning is "the process whereby knowledge is created through the transformation of experience," and children cannot learn unless they have experiences. What people see, hear, and feel is what gives them these experiences.

According to Table 4's results, preschoolers' social and emotional development can benefit from using digital storybooks. Furthermore acknowledged is the fact that

interactive whiteboards in preschool settings can help kids develop their social skills and emotional awareness. This findings is in agreement with Jean Piaget, who believed that interactive tools, like tablets, can help children actively construct their knowledge and develop cognitive skills.

Lev Vygotsky, who highlighted the value of social interaction in learning and saw tablets as a tool that can facilitate collaborative learning experiences, would agree with the study's conclusion that tablet integration is essential for fostering healthy social and emotional development in preschoolers. The aforementioned results are consistent with the literature analysis I conducted in Chapter 2, which also affirms that integrating tablets and computers can present numerous prospects for customised learning encounters that let kids advance at their own speed.

## **CHAPTER FIVE**

### **SUMMARY, CONCLUSION AND RECOMMENDATIONS**

#### **SUMMARY**

The purpose of the study is to ascertain how technology affects the academic growth of preschoolers in Edo State's Oredo Local Government Area. The purpose of the study was to determine how the availability, usability, and accessibility of technological tools affected the education of preschoolers in Edo.

Empirical studies indicate that technology has a significant impact on the instruction and comprehension of young children. It is an effective teaching and communication tool. Because of its interactive features and ability to satisfy their wants for realistic methods of positively guiding their own educational endeavours and finishing assignments in a way that suits their interests and needs.

This survey was conducted using a questionnaire that had two sections. While section B examined the effects of technology on preschoolers' academic development in the Oredo Local Government Area of Edo State, section A aimed to gather information about the biographical details of the respondents.

The effect of technology on preschoolers' intellectual development was also examined by researchers. To explore how technology affects their social and cognitive skills, a

variety of factors were looked at, including the use of educational apps and interactive learning environments. Additionally, research was done on how screen usage affected their overall learning objectives. Gaining insightful knowledge on how to best integrate technology into early childhood education to support children's intellectual development is the goal.

This comprehensive study assumes paramount significance in assessing the profound impact of technology on the pedagogical efficacy of Early Childhood education. The research team anticipates that the implementation of the proposed recommendations and personal perspectives outlined within this work can potentially revitalize the diminished reputation of technology in early childhood instruction. By adhering to these guidelines, the inherent objectives of technology integration can be fully realized.

## **CONCLUSION**

The study's conclusions showed that there are numerous advantages to teachers utilising technology to improve motivating students and raise overall satisfaction. When technology is incorporated into the early childhood teaching and learning community in meaningful and purposeful ways, according to the teachers involved in this study, it can

be a valuable tool for making children's learning visible and for building and strengthening relationships with children, families, and teachers.

In order to meet specific needs and foster synergies, the Nigerian government and its developmental bodies should strategically invest in technology by providing appropriate technological infrastructure for early childhood education. This means that careful planning and analysis must precede any technological infrastructure provision.

Preschool educators should make use of technology to give lesson plans, research, and curricular materials. This will boost student and teacher creativity, innovation, and teamwork, ultimately improving student achievement.

Technology use is widespread, both at home and in educational settings. The use of digital tools has an impact on students' achievement in math, reading, engagement, and teamwork. If instructors and parents are given the right resources to use digital tools to apply learning, the benefits of educational technologies are good. However, if some digital tools are misused, bad things can happen. As researchers have indicated, more research is needed to fully understand the impact of teacher professional development and the prevalence of particular digital tools and applications that serve as educational resources for students (Ehmann, 2020; Huda, et al., 2017; Mantilla & Edwards, 2019; Ntuli & Kyei-Blankson, 2012; Park, et al., 2017). According to Hosokawa and Katsura

(2018), further researchers have discovered the necessity of conducting investigations on the relationship between technology and behavioural problems. Lastly, Ntuli and Kyei-Blankson (2012) suggest that future studies should look into the necessity for technology tools that offer proper evaluation, scoring, and feedback in connection to the Common Core Standards.

In summary, early childhood technology use is a powerful tool for helping pupils develop their creativity, confidence, and teamwork skills. Educating kids as 21st century learners who use technology to stay involved, develop academic abilities, and stay motivated is possible for teachers who employ digital technologies in the classroom.

## **RECOMMENDATIONS**

The study's conclusions led to the following recommendations being made:

1. Researchers and educators should encourage technology among preschool children. This will help in exploring how early childhood teachers notice, recognize and respond to the impact of technology on young children through a series of case studies.

2. Teachers should help to create opportunities for young children to understand and appreciate the benefits of visual images and graphics in knowledge which are part of their everyday experiences.
3. Further researchers should examine early childhood teacher education to incorporate adequate technology content.
4. Government should give teachers opportunities to actively engage in dialogue to explore and articulate their pedagogical approach to technology in ECE.
5. The teachers should be involved in decision making surrounding the purchasing, implementing and application of technology and sometimes improvise when necessary rather than being randomly supplied with resources to use.
6. Technological resources center should be established in varying capacities in various early childhood education centers in Oredo Local Government Area of Edo State.
7. Balance screen time: It's important to strike a balance between screen time and other activities. Limit the amount of time children spend using technology and ensure they have a variety of hands-on experiences as well.
8. Choose quality educational apps: Educators should Look for apps that are specifically designed for early childhood education and promote interactive

learning. Check for age-appropriate content, engaging activities, and positive reviews.

9. Encourage active participation: Teachers should encourage children to actively engage with technology rather than passively consuming content. Encourage them to interact with the apps, ask questions, and explore different features.
10. Promote offline learning: Remember that technology should not replace traditional learning methods. Encourage children to engage in offline activities like reading books, playing with puzzles, and engaging in imaginative play.
11. Parental involvement: Parents should play an active role in their child's technology use. Supervise their screen time, explore apps together, and discuss what they are learning. This helps create a healthy and supportive learning environment.

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## APPENDIX

Institute of  
Education,  
University of Benin,  
Benin City.

Dear Respondent,

### REQUEST FOR COMPLETION OF QUESTIONNAIRE

I am **EGBA HOSSANA OGBENE**, a final year student of the Institute of Education, University of Benin, Benin city. I am conducting a research on the topic: **“INVESTIGATING THE IMPACT OF TECHNOLOGY ON ACADEMIC DEVELOPMENT AMONG PRE SCHOOL CHILDREN IN OREDO LOCAL GOVERNMENT AREA OF EDO STATE”**. This study is in partial fulfillment of the requirements for the award of Bachelor of Education (B.Ed) Degree in Education.

In order to enhance accurate data gathering. I solicit for co-operation in filling the questionnaire. Every information supply will be treated with utmost confidence for academic purposes.

Thanks.

Yours Faithfully,

**Egba Hossana Ogbene**  
**(Researcher)**

**SECTION A: PERSONAL DATA**

Sex: Male ( ) Female ( )

Age: 18 – 25 ( ) 26 – 35 ( ) 36 – 45 ( ) 46 – 55 ( ) 56 and above ( )

**SECTION B:**

Please tick (√) against your response to the question where necessary

SA – Strongly Agree, A – Agree, D – Disagree, SD – Strongly Disagree

S/N	ITEMS	SA	A	D	SD
	<b>What is the status of technology in the schools</b>				
1.	Interactive digital tools help children learn better				
2.	Technology enhances student engagement and participation in the classroom				
3.	Technology makes learning more fun				
4.	Technology have a positive impact on the learning experience in schools				

	<b>What is the attitude of teachers to the use of technology</b>				
1.	Technology enhances the learning experience for students				
2.	Technology should play a larger role in education				
3.	Using technology as a teaching tool is very comfortable				
4.	Technology help address the individual needs of children				

	<b>Will the use of technology in early childhood education improve learning</b>				
1.	Integrating digital storytelling tools into early childhood education can improve children’s engagement and motivation to learn				
2.	Interactive whiteboards provide more personalized and interactive learning experience for young				

	children				
3.	The use of tablet in early childhood education can have a positive impact on children’s learning outcomes.				
4.	Technology provides valuable opportunities for children to practice critical thinking and improve their learning abilities in pre-school children				

	<b>Will the use of interactive digital tools affect the social and emotional development of preschool children</b>				
1.	The use of digital story books can have a positive impact on the social and emotional development of preschool children				
2.	Interactive whiteboard can enhance children’s social skills and emotional awareness in a preschool setting				
3.	Integration of tablets is necessary for promoting healthy social and emotional development in preschool children				
4.	Virtual classroom can enhance children’s social skills and emotional awareness in a pre-school setting				