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Article

# Information and Communication Technology Tools and Caregivers' Teaching Effectiveness in Public Preschools in Rivers East Senatorial District

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Abstract: This study examines the relationship between Information and Communication Technology tools and caregivers' teaching effectiveness in public preschools in Rivers East Senatorial District of Rivers State. Three objectives and three corresponding hypotheses were formulated to guide the study. The study employed the correlational research design. The population of the study comprised 323 caregivers, out of which 130 were sampled for the study using stratified random sampling and simple random sampling techniques. The instrument for data collection was the researcher-designed questionnaire (ICTTCTEQ) which was validated and trial tested to ascertain its reliability. The Pearson product moment correlation coefficient (PPMC) was used to analyze the data. The result of the study revealed that there is no significant relationship between online platforms and caregivers' teaching effectiveness in public preschools in Rivers East Senatorial District of Rivers State; there is a significant relationship between digital resource libraries and caregivers' teaching effectiveness in public preschools in Rivers East Senatorial District of Rivers State; there is a significant relationship between assessment management platform and caregivers' teaching effectiveness in public preschools in Rivers East Senatorial District of Rivers State.

**Keywords:** Online Platforms, Digital Resource Library, Assessment Management Platform, Information and Communication Technology, Teaching Effectiveness

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### 1. Introduction

Globally, All children should have access to high-quality education. High-quality pre-primary education is the cornerstone of a child's education, and the outcome of this stage dictates the outcome of all others [1]. Young children's education creates a strong foundation for their future schooling. Youngsters who receive a top-notch early education are more likely to succeed academically in the future. They have a higher chance of finishing high school, going on to continue their education, and landing a better job. Early education builds a love for learning, improves academic readiness, and cultivates a positive attitude toward school, laying the groundwork for lifelong learning. A child's overall growth, learning capacity, social skills, and chances of success in the future are all influenced by their early childhood education. Giving children a loving and engaging learning environment during their early years can have a positive impact on their lives and, ultimately, lead to a more prosperous society. However, effective and efficient caregiver participation is necessary for all of these to occur.

A child's education and development are significantly influenced by their caregiver. The overall development and learning outcomes of children can be significantly impacted

by the effectiveness of the caregiver's instruction. Children's learning and development are influenced by their teachers' efficacy [2]. In order to effectively teach young children, caregivers must possess a variety of abilities, dispositions, and conducts that support the development of a happy and fruitful learning environment. Knowledge and expertise, effective classroom management, effective communication skills, lesson planning, adaptability, emotional intelligence, inclusion and diversity, assessment and feedback, effective use of individualized instruction, communication and collaboration, emotional support, use of play-based learning, and ongoing professional development are just a few of the indicators used to gauge a preschool teacher's effectiveness as a teacher.

The efficiency of caregivers in the classroom is greatly influenced by their training and educational background. An excellent foundation in early childhood education is possessed by Effective Caregivers. They are well-versed in child development, age-appropriate teaching methods, and curriculum design. They stay up to date with the latest research on optimal practices for early childhood education. A caregiver must have gathered this knowledge while working as a student teacher at a prestigious university. According to the National Policy on Education [3], the Nigerian Certificate in Education (NCE) is the fundamental qualification for a teacher in Nigeria. Additionally, in order to stay current with the most recent research, instructional strategies, and best practices, caregivers must engage in ongoing professional development. Teachers can improve their knowledge and abilities through training sessions, conferences, and workshops. To better meet the many diverse needs of preschoolers, a caregiver may benefit from specialized training in areas like literacy, language development, and child behavior management.

One of the most important aspects of a preschool teacher's job is classroom management. A good and orderly learning environment is produced by effective classroom management, which makes it easier for kids to flourish. Preschool classroom management calls for efficient techniques for enforcing rules, controlling conduct, and creating a friendly, inclusive learning environment. Skilled caregivers use a variety of techniques to keep preschoolers interested, maintain order, and create a supportive learning environment. Caregivers also understand that each child is different, with different learning needs and abilities. In order to accommodate each child's interests, learning styles, and developmental phases, they adjust their teaching methods and exercises accordingly. The Caregivers provide opportunities for hands-on experience while encouraging inquiry and problem-solving. Effective caregivers also use play-based activities to foster cognitive growth, creativity, problem-solving, and social skills. Children can explore and learn via hands-on experiences thanks to their combination of structured and unstructured learning activities.

As caregivers engage with young children, parents, and other educators, effective communication is essential. A happy and productive learning environment is greatly enhanced by effective communication [4]. When speaking with small children, caregivers must use language that is age-appropriate and understandable. They must speak clearly and in an upbeat manner so that kids may comprehend directions and feel encouraged. They must also be attentive listeners. Children feel validated and respected when their opinions, ideas, and worries are actively heard. Building solid teacher-student relationships and encouraging children to express themselves are two benefits of paying close attention to what they have to say. Good caregivers keep the lines of communication open with families and parents. They work with parents to support their child's learning at home, address any concerns, and give frequent updates on the children's progress. To address certain developmental requirements, they also work in conjunction with other specialists like occupational therapists or speech therapists.

A crucial component of a preschool teacher's job is lesson preparation, which influences instruction effectiveness by offering a structure for engaging and developmentally appropriate learning activities. Preschoolers' ages, interests, and skills should all be considered in lesson designs that follow Developmentally Appropriate

Practices (DAP). Activities ought to be planned to support the cognitive, social, emotional, and physical growth of the whole person. Every session should have well-defined learning objectives that outline the precise knowledge or abilities that learners should acquire. This guarantees that goals are both attainable and appropriate for the children's developmental stage. Play-based learning activities that let children experiment, explore, and play imaginatively should be incorporated into lesson plans in order to help them develop their creativity and problem-solving abilities. To accommodate various learning preferences and styles, it should include a range of educational activities. To create a well-rounded learning experience, this could involve practical exercises, group discussions, arts & crafts, music, and movement.

Children feel safe, respected, and valued in the caring and encouraging environment that caregivers provide. By teaching empathy, conflict resolution, and emotional management techniques, caregivers promote social and emotional development. An effective caregiver builds strong relationships with their preschoolers in order to foster a sense of trust and belonging. Caregivers are responsible for the upbringing and education of children under the age of five. A child's preschool experience should be successful if the caregiver uses a variety of strategies to guarantee that the lessons are delivered smoothly. In order to enhance the caliber and efficacy of an educational system, caregivers are thus encouraged to keep up to date and broaden their expertise. They are supposed to assume more responsibility and become friends who play, sing, and experience the joys and sorrows of the kids in their care [5]. In light of this, a caregiver should be well-prepared and possess a variety of instruments that will help them tackle these difficult tasks. Tools related to information and communication technology (ICT) seem to be at the top of the list.

ICT plays a crucial role in our daily life. It is thought to be the cornerstone of economic expansion. This is because ICT greatly simplifies and reduces the amount of time needed for tasks. There is a connection between ICT and education, among other industries [6]. According to education experts, properly applied ICT tools will significantly enhance the teaching and learning process, promote and raise knowledge and skill development, and increase employment opportunities [7]. This suggests that when utilized appropriately, ICT can increase caregiver efficacy. Effective use of various ICT tools can increase a caregiver's knowledge and proficiency in the field of early childhood education while also keeping them up to date on new developments and ongoing changes in the field. Online learning platforms, digital resource libraries, and assessment management platforms are a few examples of these ICT tools.

Online learning platforms, sometimes referred to as e-learning platforms, are websites or online platforms that provide educational resources, materials, and courses to learners online. Users can access learning resources from any location with an internet connection and at their convenience thanks to these platforms, which cover a wide range of disciplines and themes. These platforms have shown themselves to be a quick and effective means of disseminating knowledge to students around the globe. Udemy, Allison, Coursera, LearnWorlds, Thinkific, LearnDash, Codecademy, Future Learn, and Skillshare are a few examples of online learning systems. The ability to take a course and master a specific set of skills from the comfort of one's own home is a significant benefit of online learning platforms. These online learning resources can help caregivers expand their knowledge and skill base. Certain teaching and classroom management techniques are acquired through specialized courses offered by some online learning platforms rather than being taught in higher education. As a result, caregivers are exposed to instructors from nations other than their own, which helps them expand their knowledge.

A vast array of digital resources, including papers, photos, movies, audio files, and other types of media, are accessible through digital resource libraries, which are online platforms or repositories [8]. For the purposes of education, research, or general information, these libraries are made to arrange, store, and make accessible digital content.

They are useful information and material sources that frequently provide collections from a range of fields, such as science, literature, history, art, and more. Libraries, museums, government agencies, private groups, and educational institutions can all manage digital resource libraries. Usually, they have search features that let users locate particular resources using keywords, categories, or other parameters. To aid in finding and comprehending each content, these platforms frequently offer metadata and descriptive details. Digital Public Library of America (DPLA), Europeana, Internet Archive, Project Gutenberg, PubMed Central, and JSTOR are a few examples of digital resource libraries. Other online digital resource libraries exist, each with a distinct collection and area of interest. Depending on the library, different features and materials may be available.

Software programs or online resources that make it easier to create, administer, and analyze tests, assessments and examinations are known as assessment management platforms. These platforms are intended to produce statistics and analytics on student performance, facilitate the assessment process, and offer resources for creating and delivering assessments [9]. Assessment development, assessment delivery, automated grading, rubric-based evaluation, data analysis and reporting, security and customisation, integration, and interoperability are some of the main attributes and capabilities of assessment management platforms. ExamSoft, Questionmark, ProProfs Quiz Maker, GradeCam, Easy LMS, and others are a few examples of assessment management systems.

It is clear from the comments above that ICT has given caregivers access to a wide range of tools and information that can enhance their teaching methods. Multimedia materials like movies, interactive presentations, and educational apps can be used by caregivers to make preschool lessons more engaging and dynamic. By allowing them to design lessons and activities that are tailored to the requirements of each child and adjust assessments to each learner's capacity, ICT can assist teachers in differentiating their instruction. Additionally, parents and caregivers can collaborate and communicate more readily. Teachers can use internet platforms, messaging apps, and email to provide parents with progress reports on their children. Preschool performance data may be effectively gathered and examined with the use of ICT. Caregivers can utilize assessment tools and learning management systems to track preschoolers' progress, identify areas for growth, and build lesson plans based on the information. Through data analysis, caregivers can identify learning gaps in preschoolers, adjust their pedagogical strategies, and provide customized solutions.

It is regrettable to observe that, despite the potential advantages of utilizing ICT in the classroom, public preschool expansion in Nigeria is still stalled, with young children entering primary school with little to no documentation of their preschool experience. The inefficiency of the caregivers in these preschools is primarily to blame for this. Therefore, the researchers wish to investigate the relationship between these ICT tools and caregivers teaching effectiveness in public preschools in Rivers State's Rivers East Senatorial District. Statement of the Problem

The quality of public preschool education in Nigeria lags behind international standards, largely due to the limited integration of modern teaching tools and technology into the educational process. While advancements in educational technology have transformed early childhood education worldwide, many public preschools in Rivers State face significant challenges in adopting and implementing these modern tools effectively. Key issues contributing to this stem from the inability of Caregivers to employ modern tools in teaching.

While the goal has always been to have effective and skilled Caregivers in a preschool, most Caregivers in Rivers State public preschools exhibit qualities that highlight ineffectiveness. Some of the characteristics exhibited by these caregivers include lack of subject knowledge, poor classroom management skills, inadequate communication skills, limited classroom engagement, inconsistent or ineffective assessment practices, and

limited professional growth among others. Moreso, many caregivers in public preschools remain adamant about change. They still rely on archaic ways despite the recent focus on technology. This has resulted in ineffectiveness in carrying out their assigned teaching duties and in turn, a stunted growth in Early Childhood Education.

In bridging this gap, various governmental and non-governmental agencies have embarked on sensitization campaigns on the benefits of employing ICT tools in carrying out duties as Caregivers. Despite these efforts, caregivers seem not to employ online learning platforms, digital resource libraries, assessment management platforms, among others in teaching. Is there a relationship between these ICT tools and caregivers' teaching effectiveness in public preschools in Rivers East Senatorial District? This study will answer the above question.

# Aim and Objectives of the Study

The aim of this study is to investigate the relationship between Information and Communication Technology tools and Caregivers' teaching effectiveness in public preschools in Rivers East Senatorial District. Specifically, the research sought to achieve the following objectives:

- 1. To examine the relationship between online learning platforms and Caregivers' teaching effectiveness in public preschools in Rivers East Senatorial District.
- 2. To determine the relationship between digital resource libraries and Caregivers' teaching effectiveness in public preschools in Rivers East Senatorial District.
- 3. To determine the relationship between Assessment Management Platforms and Caregivers' teaching effectiveness in public preschools in Rivers East Senatorial District.

# **Hypotheses**

The following null hypotheses were formulated to further guide the study:

- 1. There is no significant relationship between online learning platforms and Caregivers' teaching effectiveness in public preschools in Rivers East Senatorial District.
- 2. There is no significant relationship between digital resource libraries and Caregivers' teaching effectiveness in public preschools in Rivers East Senatorial District.
- 3. There is no significant relationship between assessment management platforms and Caregivers' teaching effectiveness in public preschools in Rivers East Senatorial District.system.

#### 2. Materials and Methods

The study adopted the correlational survey research design. 323 Caregivers found in 268 Preschools in Rivers East Senatorial District constituted the population of the study. 130 Caregivers representing 40% of the entire population constituted the sample size for the study using stratified random sampling and simple random sampling techniques. A researchers-designed 25-item questionnaire titled "ICT Tools and Caregivers' Teaching Effectiveness Questionnaire" (ICTCTEQ) was used for the study. Validation of the instrument was carried out by two experts in Early Childhood/Primary Education Department of Ignatius Ajuru University of Education. The instrument had a reliability index of .78. The research instrument was administered by the researchers with the help of two research assistants. In some cases, the researchers had to explain the operational terms as some caregivers were not able to understand them at first. The respondents responded to the items immediately and the copies of the questionnaire were retrieved by the researchers on the spot to avoid misplacement and alteration. Pearson Product Moment Coefficient (PPMC) was used to test the null hypotheses at 0.05 significant level.

### 3. Results

# 1. Hypothesis One

There is no significant relationship between online platforms and caregivers' teaching effectiveness in public preschools in Rivers East Senatorial District of Rivers State.

**Table 1.** Correlation coefficient between online platforms and caregivers' teaching effectiveness.

		Online learning platforms	Caregivers' teaching effectiveness
Online learning	Pearson Correlation	1	.028
platforms	Sig. (2-tailed)		.749
	N	130	130
Caregivers' teaching	Pearson Correlation	.028	1
effectiveness	Sig. (2-tailed)	.749	
	N	130	130

Table 1 showed the Correlation coefficient between online platforms and caregivers' teaching effectiveness in public preschools in Rivers East Senatorial District of Rivers State. The correlation between online platforms and caregivers' teaching effectiveness was not significant at (r=.028, p>.749). Therefore, the null hypothesis is retained, meaning that there is no significant relationship between online platforms and caregivers' teaching effectiveness in public preschools in Rivers East Senatorial District of Rivers State.

# 2. Hypothesis Two

There is no significant relationship between digital resource libraries and caregivers' teaching effectiveness in public preschools in Rivers East Senatorial District of Rivers State.

**Table 2.** Correlation coefficient between digital resource libraries and caregivers' teaching effectiveness

		Digital resource libraries	Caregiver's teaching effectiveness
Digital resource	Pearson Correlation	1	.437**
libraries	Sig. (2-tailed)		.000
	N	130	130
Caregiver's teaching	Pearson Correlation	.437**	1
effectiveness	Sig. (2-tailed)	.000	
	N	130	130

<sup>\*\*.</sup> Correlation is significant at the 0.01 level (2-tailed).

Table 2 showed the Correlation coefficient between digital resource libraries and caregivers' teaching effectiveness in public preschools in Rivers East Senatorial District of Rivers State. The correlation between digital resource libraries and caregivers' teaching effectiveness was significant at (r=.437, p<.000). Therefore, the null hypothesis is rejected, showing that there is a significant relationship between digital resource libraries and caregivers' teaching effectiveness in public preschools in Rivers East Senatorial District of Rivers State.

# 3. Hypothesis Three

There is no significant relationship between assessment management platform and caregivers' teaching effectiveness in public preschools in Rivers East Senatorial District of Rivers State.

130

1

130

caregivers' teaching effectiveness Caregiver's teaching Assessment Management Platform effectiveness .432\*\* Pearson Correlation 1 management platform Sig. (2-tailed) .000

130

.432\*\*

.000

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Table 3. Correlation coefficient between assessment management platform and

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Ν

teaching Pearson Correlation

Sig. (2-tailed)

Table 3 showed the Correlation coefficient between assessment management platform and caregivers' teaching effectiveness in public preschools in Rivers East Senatorial District of Rivers State. The correlation between assessment management platform and caregivers' teaching effectiveness was significant at (r=.432, p<.000). Therefore, the null hypothesis is rejected, meaning that there is a significant relationship between assessment management platform and caregivers' teaching effectiveness in public preschools in Rivers East Senatorial District of Rivers State.

#### Discussion

Assessment

Caregiver's

effectiveness

The finding in hypothesis one shows that there is no significant relationship between online platforms and caregivers' teaching effectiveness in public preschools in Rivers East Senatorial District of Rivers State. The finding of the study is at variance with the findings of [10] who found that teaching approaches and effectiveness are closely aligned with technology in establishing curriculum and disseminating course instructions, concluding that online learning platform may be applied in the classroom to enhance teaching approaches. The finding of this study also disagrees with the findings of [11] who found that the more effective online learning was, the more benefits and positive outcomes the pupils experienced. Furthermore, the finding of the study corroborates the views of [12] who opines that online learning platforms often feature interactive elements, such as quizzes, animations, and gamified content, which can captivate a child's attention and make learning more enjoyable. Engaged students tend to absorb and retain information more effectively.

The finding in hypothesis two show that there is a significant relationship between digital resource libraries and caregivers' teaching effectiveness in public preschools in Rivers East Senatorial District of Rivers State. The finding of the study corroborates the findings of [13] who found that the utilization of library information resources and services correlated significantly with the perceived teaching effectiveness of the teachers. Also, the finding of the study is in consonance with the views of who opines that digital resource libraries can play a significant role in enhancing the teaching effectiveness of teachers as they provide educators with a wealth of digital content, materials and tools that can be tailored to the specific needs and goals of their classrooms. The finding of the study, on the contrary, is at variance with the findings of who found that despite teachers reporting great value in learning resources and educational digital libraries, significant and lasting impact on teaching practice remains difficult to obtain.

The finding in hypothesis three shows that there is a significant relationship between assessment management platform and caregivers' teaching effectiveness in public preschools in Rivers East Senatorial District of Rivers State. The finding of the study supports the views of [14] who states that assessment management platforms automate tasks such as test creation, grading, and result analysis, saving teachers valuable time allowing them to focus more on lesson planning, instructional design, and direct student interaction. Also, the finding of the study agrees with the views of [15] who observes that

<sup>\*\*.</sup> Correlation is significant at the 0.01 level (2-tailed).

assessment management platforms generate data analytics and reports that teachers can use to identify trends, assess the effectiveness of instructional strategies, and tailor teaching methods to address specific student needs. Again, the finding of the study is in consonance with the findings of [16] who found that teachers held different notions toward assessment for learning before the intervention in the form of a workshop. However, after the workshop, the teachers demonstrated an understanding of what assessment for learning entails and how it can be implemented during hands-on practical activities using easily accessible resources. Furthermore, the finding of the study is in agreement with the findings of [17] whose findings indicated that teachers generally perceive assessment for learning as an effective method to understand and improve the performance of the students.

#### 5. Conclusion

Based on the findings of the study, it was concluded that Information and Communication tools significantly relate to caregivers' teaching effectiveness. The discussed Information and Communication tools (digital resource libraries, and assessment management platforms) if properly utilized will go a long way in the attainment of caregivers' aim and objectives in the classroom, and their efficient and effective job performance in the school system. Caregivers in preschool centres are therefore expected to make effective use of such Information and Communication Technology tools like digital resource libraries, assessment management platforms, ICT gadgets and the likes to enhance their teaching effectiveness and job performance in preschools.

Based on the findings and conclusion of the study, the following recommendations were made:

- 1. There is the need for the provision of Information and Communication Technological tools to enhance the teaching effectiveness of caregivers in early childhood centres.
- 2. There is the need to organize and encourage caregivers to regularly attend workshops, seminars and conference where their knowledge and skill development on the utilization of ICT tools will be enhanced.
- 3. Caregivers should be encouraged to collaborate with their colleagues both in public and private early childhood centres to help them be abreast with recent educational technologies that could enhance effective teaching in the classroom.

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