ASSESSMENT OF THE EXTENT OF PRESCHOOL TEACHERS' UTILISATION OF INFORMATION AND COMMUNICATION TECHNOLOGY IN TEACHING

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Abstract

The use of information and communication technology (ICT) in this twenty-first-century classrooms has become eminent. Similarly, the emergence of the coronavirus 2019 (Covid-19) pandemic has made most countries place priority on the online teaching platform through the use of ICT tools. This development has implicated the education system in Nigeria as one is not sure how prepared the teachers are for the adoption of the use of ICT in teaching. In this regard, literature is scarce on the extent of utilization of ICT in teaching among preschool teachers in Nigeria. This situation necessitated this study on the assessment of the extent of preschool school teachers' utilisation of information and communication technology in teaching. Using a descriptive survey research design, a sample of 157 preschool practitioners in Enugu State, Nigeria participated in the study. Information and communication technology usage questionnaire was developed by the researchers and validated for this study. The internal consistency reliability index of the items of the instrument was estimated to be 0.76 using the Cronbach alpha method. Data were collected during the researchers' visits to the schools used for the study. Using frequency and percentage, the data were analysed quantitatively. It was revealed that preschool teachers to a very low extent utilize ICT for teaching purposes. This implies that if urgent action is not taken to encourage teachers in the usage of ICT for teaching, the adoption of an online teaching platform will not be feasible. It was thus, recommended that preschool teachers should be encouraged through in-service training on the use of ICT in teaching.

Keywords: Assessment, Information and communication technology, Preschool teachers.

1 INTRODUCTION

The old method of teaching and learning in schools is no longer appropriate for classrooms in the twenty-first century. Furthermore, the introduction of Covid-19 has compelled most developed countries to use remote or online teaching and learning methods. In accordance with the above, [1] observed that many countries and educational sectors have been forced to use online learning as a result of the COVID-19. On a global scale, information and communication technology (ICT) is commonly regarded as a reliable tool for promoting educational reform and growth [1]. Learners must be prepared to use digital media in the twenty-first century for learning, teaching, gathering, generating, and sharing information for educational purposes, according to the International Society for Technology in Education's 2019 criteria [2]. Practitioners should also widen their students' online, distance, or blended (both online and face-to-face) learning experiences as prospective teachers of 21st-century learners [2]. Rapid improvements in information and communication technologies have revolutionized university teaching and learning (ICT) [3]. The use of ICT has revolutionized the way/mode of delivering education and pedagogy in the last two years, resulting in a range of learning opportunities for students [4]. Information and communication technology is essential for both teacher training and delivering high-quality education [5]. Students use technology to expand their knowledge and increase their personalized learning and creativity [4]. In educational institutions, the use of information and communication technologies (ICT) in the teaching-learning process is becoming increasingly common [6]. However, the acceptance of the concept by instructors and parents is critical to the success of efforts aimed at achieving this goal [6]. Teachers working in primary schools were more likely to utilize mobile devices in class than those working in high schools or general/vocational lyceums [7].

In light of the current situation, one could wonder the extent to which Nigerian preschool teachers are using information and communication technology (ICT) for classroom instruction. One of the educational challenges that teacher education is currently confronting is the increase of digital competence among teachers as a result of the entrance of information and communication technology into the educational

environment [8]. A significant component is instructors' ability/competency to incorporate information and communication technology (ICT) into the teaching-learning process [9]. As a result, it is vital to assess preschool instructors' ICT ability in order to utilize online education during and after the Covid-19 pandemic. Teacher and student orientation to ICT for online learning, motivation, and school leadership practices all influence ICT integration in education [1]. Technical support infrastructure (competent support staff, ICT tools and systems, internet, and steady power supply) and policy support infrastructure (ICT policy, ICT policy implementation plan, and clear ICT vision) all acted as antecedents to ICT adoption in Zimbabwean universities [3]. According to the findings, motivational variables and virtual competency are the most important determinants of e-learning efficiency [4]. Early childhood educators lack the digital abilities essential to be labeled "digital natives," and they are unable to use ICT in their academic or professional lives [10]. The parameters of age and gender have an impact on the level of pedagogical digital competence of teaching personnel, but the educational stage in which they teach has no impact [11].

Lack of technical equipment and support, as well as teachers' and students' ICT abilities/competences, are all key considerations in effective online teaching and learning [12]. Gender, age, and academic degree are all influences on digital skill acquisition, but they do not determine the extent of ICT utilisation [13]. During the previous lockdown owing to teachers' lack of basic ICT proficiency, students' academic achievement was mostly driven by their personal motivation in learning and the pleasure or fulfillment that digital learning activities may bring [14]. ICT ownership and daily use, ICT frequency, professional ICT education or training, and ICT skills are all things to think about when it comes to adopting online teaching and learning [15]. Digital literacy, as a set of skills, lays the groundwork for teachers' full participation in the knowledge society, as well as their students' involvement in demonstrating their abilities [16]. Pre-service teachers have a moderate level of digital literacy and are having difficulty with the content creation aspect [17]. Pre-service teachers have a moderate level of digital literacy and are having difficulty with the content creation component [18]. Rather than implementing ICT into the curriculum, Chinese primary school teachers opted to limit the role and scope of its use in Early Childhood Education [19]. Rather than implementing ICT into the curriculum, Chinese primary school teachers opted to restrict the role and scope of its use in Early Childhood Education [20]. The data suggest that the majority of Indonesian students were willing to study online, but that a number of factors, including ICT proficiency, limited their capacity to do so [21]. Teachers were found to be inept in all five digital dimensions, notably in the creation of digital content [8]. Based on self-reported use, proficiency, and the requirement for professional training in digitalization in teaching, it was discovered that teacher educators do not use digital resources primarily for pedagogical aims [22].

The above review of literature has demonstrated that the extent to which teachers utilise ICT is relevant to the adoption of online teaching and learning. According to the literature, certain variables prevent teachers from effectively using the online reaching option. However, no research has been undertaken in Nigeria to determine the extent to which preschool teachers utilize ICT for instructional delivery. This study was prompted by a gap in the literature.

1.1 Research Question

The question pursued in this research was:

- What is the extent of preschool teachers’ utilization of ICT for teaching?

2 METHODS

This study used a descriptive survey research design based on the scientific research paradigm and quantitative research technique. The survey comprised 157 preschool instructors from Enugu State, Nigeria's Nsukka Education Zone. A simple random selection procedure was used to choose this sample from a population of 1,768 preschool instructors in the Nsukka Education Zone. A simple random selection approach was employed in the first stage to select 24 primary schools from the overall population of primary schools in the study area. The preschool teachers from the sampled schools were then chosen at random using a simple random selection procedure. This method of selection was employed to ensure that each preschool teacher in the study had an equal chance of getting chosen. The data was gathered using a questionnaire developed by the researchers to assess preschool instructors' use of ICT in the classroom. The questionnaire was divided into two sections: section A and section B.

The researchers were able to collect demographic information from the participants in Section A, as well as information on the extent to which preschool teachers used ICT for instruction in Section B, which included 15 questions. The survey items were scored on a four-point Likert scale: strongly agree, agree, disagree, and strongly disagree. Two experts in early childhood care and education, as well as one expert in educational research, all from the University of Nigeria, Nsukka's Faculty of Education, validated the instrument/measure. The specialists were in charge of double-checking the instrument's items against the study's goals. The validators' feedback was used to develop the instrument prior to trial testing. Following that, 20 preschool teachers who were not involved in the study were sent copies of the instrument for trial testing. To establish the internal consistency dependability of the instrument's items, the data was subjected to a Cronbach alpha reliability estimate. As a result of the findings, the investigation received a dependability index of 0.87. The research ethics committee at the University of Nigeria accepted the study's methodology. Prior to data collection, participants were given informed consent forms to sign. To acquire access to the research facilities, the heads of each of the participating schools provided timely authorisation letters. During visits to each of the study's participating schools, data was obtained. As a result, a method for immediately administering the device was chosen. At their individual schools, participants were handed copies of the instrument and given 20 minutes to respond before being picked up. The data was quantitatively analyzed using frequency and percentage.

3 RESULTS

The results were presented in line with the research questions and hypothesis

Research Question: What is the extent of preschool teachers' utilization of ICT for teaching?

Table 1: *Percentage analysis of the extent of preschool teachers' utilization of ICT for teaching.*

S/No	Item Statement	VHE%	HE%	LE%	LE%	Remark
1	Booting computer for teaching purpose	2.50	23.60	43.90	29.90	LE
2	Shutting down the computer after teaching	7.00	14.00	33.10	45.90	VLE
3	Using computer to prepare lesson materials	1.90	10.20	47.10	40.80	LE
4	Getting lesson materials on the internet	1.90	12.70	46.50	38.90	LE
5	Using internet to browse lesson materials	3.20	15.90	43.90	36.90	LE
6	Using projector to deliver lesson materials	1.90	14.00	37.60	46.50	VLE
7	Giving students assignment using computer	1.30	14.00	45.20	39.50	LE
8	Carrying out assessment of the students' learning outcome using the google forms	5.10	22.90	53.50	18.50	LE
9	Scoring the students online	2.50	10.80	49.70	36.90	LE
10	Making lesson materials available online for students to access	2.50	14.60	53.50	29.30	LE
11	Using PowerPoint slides to teach	2.50	14.00	56.10	27.40	LE
12	Using PowerPoint presentation for lesson delivery	1.30	10.20	65.0	23.60	LE
13	Using ICT tool to give students feedback	2.50	11.50	45.20	40.80	LE
14	Using ICT tool to communicate with the students	2.50	12.10	51.00	34.40	LE
15	Using blackboard collaborate for teaching purpose	2.50	7.60	56.70	33.10	LE

Table 1 shows the percentage ratings of the preschool teachers' extent of utilisation of ICT for teaching. It shows that items 1, 3, 4. 5. 7, 8, 9, 10, 11, 12, 13, 14 and 15 had the highest percentage of low extent than the others. This implies that the preschool teachers to a low extent can boot computer for teaching purpose, use computer to prepare lesson materials, get lesson materials on the internet, use internet to browse lesson materials, give students assignment using computer, carry out assessment of the students' learning outcome using the google forms, score the students online, make lesson materials available online for students to access, use PowerPoint slides to teach, use PowerPoint presentation for lesson delivery, use ICT tool to give students feedback, use ICT tool to communicate with the students, use blackboard collaborate for teaching purpose. However, items 2 and 6 had higher percentage of very low extent implying that the preschool teachers to a very low extent can shut down the computer after teaching, use projector to deliver lesson materials. Figure 1 shows the bar chart illustration of the extent of preschool teachers' utilisation of ICT for teaching.

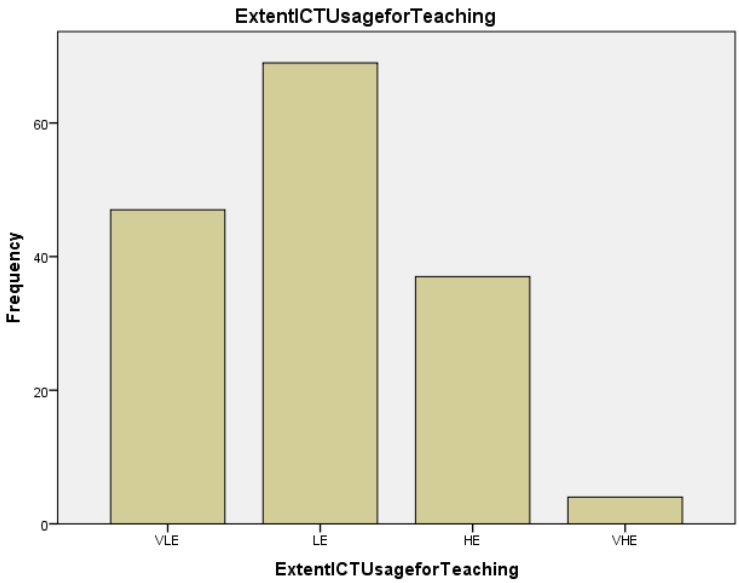

Figure 1: *Bar chart illustration of the extent of preschool teachers' utilisation of ICT for teaching.*

4 DISCUSSION OF THE RESULTS

The purpose of this study was to see how much ICT is used in the classroom by preschool teachers. According to the study's findings, preschool practitioners/teachers employed ICT for educational reasons at a low percentage. Because of their poor level of ICT use, preschool instructors' employment of an online teaching technique will be useless. Preschool teachers' poor ICT usage could be related to a variety of factors. It's probable that the teachers haven't had any in-service training on how to use technology in the classroom. It could also be related to preschools' lack of appropriate ICT facilities. These results have been supported by recent empirical studies.

Students' academic progress was largely motivated by their personal desire in studying and the pleasure or fulfillment that digital learning activities may bring during the prior lockout due to teachers' lack of basic ICT skills [14]. Pre-service instructors have a moderate level of digital literacy and are having trouble creating content [17]. Only pupils regarded capable of online learning demonstrated a connection between online learning and achievement [18]. Chinese primary school teachers choose to limit the function and extent of ICT use in Early Childhood Education rather than incorporating it into the curriculum [19]. Lack of preparation, expertise, money, and distance learning equipment are all obstacles to online teaching and learning [20]. The majority of Indonesian students wanted to learn online, but they were hindered by a number of variables, such as ICT skills [21]. Teachers were found to be lacking in all five digital dimensions, particularly when it came to creating digital material [8]. It was revealed that teacher educators do not use digital resources primarily for pedagogical purposes based on self-reported use, competency, and the demand for professional training in digitalization in teaching [22].

5 CONCLUSION AND RECOMMENDATIONS

The outcomes of the study led the researchers to the conclusion that preschool teachers' use of ICT is modest, and that this does not ensure the effective adoption of online teaching style. Due to preschool instructors' low ICT utilization, the employment of online teaching mode in the post-Covid-19 period will be severely constrained. As a result, the researchers proposed that the Local Government Education Authority 1) create suitable arrangements for in-service teacher training on the use of ICT in teaching and learning, and 2) provide the provision of ICT facilities necessary for online teaching platforms.

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