



Research Paper

# Influence of Technology Usage on Teachers Role Performance During Covid-19 Pandemic Era In Secondary Schools In Lagos State, Nigeria

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## ABSTRACT

This study examined the influence of technology usage on the role performance of secondary school teachers in the COVID-19 pandemics era in Lagos state, Nigeria. The study adopted survey, historical, ex-post facto and correlation research design involving 1800 students and 600 teachers chosen through purposive, stratified and disproportionate sampling techniques from 60 private and public senior secondary schools in the six education district of Lagos state. Two questionnaires tagged Teachers' Technology Usage Questionnaire (TTUQ) and Students' Covid-19 Pandemic Education Assessment Questionnaire (SCPEAQ) was used to gather data from teachers and students respectively. Data collected were analysed using independent T-test and Pearson's Product-Moment Correlation Analyses. The finding of the study showed that there exists a weak, negative and non-significant relationship between technology usage and the role performance of senior secondary school teachers ( $r = -0.011$ ,  $p = 0.789 > 0.05$ ) in the COVID-19 pandemic era in Lagos state, Nigeria. This paper therefore suggested that were government and private school owner should invest in technology interventions that will enhance teacher engagement with students, through improved access to content, data and networks, helping teachers to better support student learning, where effective.

**Key words:** Technology usage, Role Performance of Teachers, COVID-19 pandemic era, Educational technology tools

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## I. Introduction

The development of science and technology has greatly influenced all sectors of the economy including education. Educational transformation and reforms have become urgent issues across the globe to meet the demand of new educational objectives in the knowledge-based economy (Chang, 2010). Technology, according to Encyclopedia Britannica (2021) is the application of scientific knowledge to the practical aims of human life. It is sometimes phrased to mean, the change and manipulations of the human environment. Technology in education or, educational technology as it is commonly called, is the application of technological advancement to teaching and learning process. It is the combination of computer hardware, software and educational theory and practice to facilitate learning (Adedamola, 2022).

Technology used in classroom include; audio-visual aids, overhead projectors, smart boards, smart tables, laptops, phones, digital textbooks, cameras, virtual reality devices, videotapes etcetera. The effective use of these digital learning tools in classrooms can increase student engagement, help teachers improve their lesson plans, and facilitate personalized learning. It also helps students build essential 21st-century skills (Robert, 2021). Virtual classrooms, video, Augmented Reality (AR), robots, and other technology tools can not only make class more lively, they can also create more inclusive learning environments that foster collaboration and inquisitiveness and enable teachers to collect data on students.

Technology serves as a bridge connecting students, teachers, the school and other stakeholders in education (Adenuga *et al.*, 2019). Technology has made Information so accessible; in the past, students spent a large part of their time searching for information but nowadays, the search for information is digitized and practically everything can be found on the Internet. Instead of going to the library, students can find the desired content on Google or any other search engine. This way, the learning environment becomes an online

environment that provides information in all possible formats (text, audio, video, photographs, info graphics, etcetera).

Modern communication models have greatly facilitated learning from home, that is, online learning. Distance education enables individuals to attend lectures even if the lecturer is on another continent. Robert (2021) indicated that the places which used to belong to textbooks and notebooks is now occupied by tablets, videos, animations, Internet, audio recordings, collages, etcetera. This way, students can communicate in a way that is most familiar and relatable to them, so even shy students or those who struggle with teamwork now have the opportunity to shine and achieve better results. Technology is transforming education, changing how, when and where students learn, empowering them at every stage of their journey. Technology is also assisting teachers and school in classroom teaching and administrative processes (Adenuga, 2019). New technologies and teaching methods are benefitting teachers as many segments of their job are now more simplified.

Students are motivated to become problem solvers, critical thinkers, collaborators, and creators thanks to technology and access to resources outside of the classroom. Students who have the correct gadgets in their hands and access to technology in the classroom are better equipped with the technical and career skills necessary for success in the workforce of today and tomorrow.

In order to introduce new learning and teaching paradigms into the classroom, educators can design blended learning environments and use digital technologies for formative and summative evaluations. For the curriculum and chosen mode of instruction, appropriate instructional resources and materials are chosen (Robert, 2021).

Thus, Technology, the bedrock of virtual learning was now transforming education; changing how, when and where students learn, empowering them at every stage of their journey. Technology is also assisting teachers and schools in classroom teaching and administrative processes. New technologies and teaching methods are benefitting teachers as many segments of their job are now more simplified (Adenuga,*et al.*, 2019).

The developed countries were able to seamlessly change gears and transmitted to the alternative medium because they have invested and provided the necessary digital platforms and personnel skills upon which rests the remote teaching mechanisms, the developing countries, in contrast particularly in sub-Saharan Africa, constrained by low financial muscle, poor Internet infrastructure, competing budgetary needs, and personnel skill gaps were struggling to cope with the disruptions caused by the pandemic.

Despite the handful of efforts made by some state governments in Nigeria to adopt the alternative teaching model or e-Learning programmes (such as television and radio school broadcasts) there is an apparent lack of evidence-based data on the success of the e-Learning solutions and the extent of the organizational, institutional, and digital skill readiness in delivering optimal teaching and learning outcomes using the flexible learning or remote learning medium during health emergencies. Understanding these phenomena is essential because it helps guide curriculum and instruction design that optimizes citizens' learning opportunities and provides insights into how resource- constrained communities could deal with educational challenges during health emergencies and academic disruptions (Huang,*et al.*, 2020).

There has been a wide and global concern over the need for education to change in order to meet the 21<sup>st</sup> century vision especially as it relates to technology use. The coronavirus pandemic (made these concerns more obvious as schools and government had no other choice but to remotely continue lessons online due to uncertainty of school resumption during the COVID-19 pandemic. All efforts, all over the world, to continue education during the pandemic were technology inclined and the disparities in the world's level of education and technology became more evident.

This study was, therefore carried out to ;

1. examine the relationship between technology usage and the role performance of senior secondary school teachers during the COVID-19 pandemic era in Lagos state, Nigeria.
2. find out the relationship between technology usage and senior secondary school teacher's role performance based on academic qualification during the COVID-19 pandemic era in Lagos state, Nigeria.
3. examine the relationship between senior secondary school teachers technology usage and their role performance based on school type during the COVID-19 pandemic era in Lagos state, Nigeria.
4. examine the relationship between senior secondary school teachers' usage of technology and their role performance based on gender during the COVID-19 pandemic era in Lagos state, Nigeria.

### **Research Questions**

The following research questions served as a guide to this study;

- I. Is there any relationship between technology usage and the role performance of senior secondary school teachers during the COVID-19 pandemic era in Lagos state, Nigeria?
- II. Did the senior secondary school teachers perform their expected role during the COVID-19 pandemic era in Lagos state, Nigeria?

- III. Is there any relationship between technology usage and senior secondary school teachers' role performance based on their academic qualification during the COVID-19 pandemic era in Lagos state, Nigeria?
- IV. Is there any relationship between senior secondary school teachers' technology usage and their role performance based on the school type during the COVID-19 pandemic era in Lagos state, Nigeria?

### **Research Hypotheses**

The following research hypotheses were formulated and tested at 0.05 level of significance;

- I. There is no significant relationship between technology usage and the role performance of senior secondary school teachers during the COVID-19 pandemic era in Lagos state, Nigeria.
- II. There is no significant difference in the relationship between technology usage and senior secondary school teachers' role performance among teachers of different academic qualifications during the COVID-19 pandemic era in Lagos state, Nigeria.
- III. There is no significant difference in the relationship between technology usage and the role performance among senior secondary school teachers of different school types during the COVID-19 pandemic era in Lagos state, Nigeria.
- IV. There is be no significant gender difference in the relationship between senior secondary school teachers' use of technology and their role performance during the COVID-19 pandemic era in Lagos state, Nigeria.

## **II. Research Method**

This study adopted descriptive, historical and correlation design. The study is also of an ex- post facto design since the data already existed and could not be manipulated. The population of this study consisted of all students and teachers in the 322 public and 1501 approved private senior secondary schools in the Lagos state, Nigeria. A total of 2400 participants consisting of 1800 students and 600 teachers chosen from 60 schools participated in this study. Five public senior secondary school and five private secondary school were chosen through purposive, stratified and disproportionate sampling techniques in each of the six education districts of Lagos state; making a total of 60 schools. The sampling technique is disproportionate because the ratio of the sample schools is not proportionate to the number of public and private senior secondary schools in Lagos state. Two questionnaires adapted from Form plus online research technology questionnaires for teachers and students during the COVID-19 pandemic era were used in this study. The first questionnaire is tagged Teachers' Technology Usage Questionnaire (TTUQ) and the second, Students' COVID-19 Pandemic Education Assessment Questionnaire (SCPEAQ). The TTUQ questionnaire contains a mixture of structured and unstructured items eliciting information from teachers on technology usage and their role performance during the COVID-19 pandemic era in Lagos, Nigeria while the SCPEAQ questionnaire was further subdivided into two sections namely; personal data item and role performance of teachers evaluation items respectively which was responded to by students.

Data collected analyzed using both descriptive and inferential statistics. Descriptive statistics used included frequency tables and percentage. Correlation, independent t-test and regression analysis inferential statistics were used to test the hypotheses formulated. Computer analysis was applied using the Statistical Package for Social Sciences (SPSS), version 22.

### **Presentation of Result**

#### **Descriptive Statistics of role performance of teachers during COVID-19**

Role performance of teachers during COVID-19 is evaluated by students as it relates to how teachers performed their roles and taught during COVID-19 in public and private school respectively are presented in Table 1.

**Table 1: Distribution of the students according to their Responses to Teachers role Performance**

<b>Role Performance</b>	<b>Average Mean</b>	<b>Standard Deviation</b>
Public School Students	2.2539	0.98376
Private School Students	2.2562	0.99835

**Sources: Field Survey (2022)**

Table 1 reported the results of descriptive statistics. The mean values for all the dimensions varied from the lowest 1.5405 to the highest 2.2539. The mean values indicated general agreement of respondents with the dimensions of the study. The highest mean role performance by teachers for students is 2.2539 that is greater than 2.50 and positive. This is further corroborated by standard deviation of 0.9935 which reveals a similarity in respondents' opinions from both public and private school .

**Answering Research Questions and Testing Hypotheses**

**Research Question One:**To what extent did the senior secondary school teachers use technology in Lagos state during the COVID-19 pandemic era?

**Statement of Hypothesis One:**There is no significant relationship between technology use and the role performance of senior secondary school teachers during the COVID-19 pandemic era in Lagos state, Nigeria.

In order to test the hypothesis, Pearson’s Product-Moment Correlation Analysis was conducted between technology usage and the role performance of senior secondary school teachers during the COVID-19 pandemic era in Lagos state, Nigeria. The average scores of responses on items of technology use was computed and used as a single variable to correlate the average score on role performance. The results are presented in Table 5.

**Table 2: Relationship between technology usage and the role performance of senior secondary school teachers during the COVID-19 pandemic era in Lagos state, Nigeria.**

Variables	N	Mean	SD	r	Sig	Remark
Technology Use	600	3.2500	1.60935	-0.011	0.789	Not Significant
Role Performance	1800	1.9952	0.57175			

**Sources :**Field Work (2022)

The result of the test performed indicates that there exists a weak, negative and non- significant relationship between technology usage and the role performance of senior secondary school teachers( $r = -0.011$ ,  $p = 0.789 > 0.05$ ). The implication of this is that there is negative influence of technology use on the role performance of senior secondary school teachers.

This means that the higher the technology use, the lower the role performance of senior secondary school teachers. Hence, the null hypothesis which states that here is no significant relationship between technology usage and the role performance of senior secondary school teachers during the COVID-19 pandemic era in Lagos state, Nigeria is hereby not rejected.

**III. Discussion of Findings**

The hypothesis investigated the significant relationship between technology usage and the role performance of senior secondary school teachers during the COVID-19 pandemic era in Lagos state, Nigeria. The result of the test performed indicates that there exists a weak, negative and non- significant relationship between technology usage and the role performance of senior secondary school teachers( $r = -0.011$ ,  $p = 0.789 > 0.05$ ). This finding is in congruence with literature and findings from research on COVID-19 and technology usage for teaching .As indicated by Adedamola (2022), empirical evidence that established Nigerian educational sector as in most developing countries were not ready for such an abrupt transition from in-person education to a complete virtual education. This was also supported by Zhang, Wang, Yang, & Wang (2020) stated, many of them lacked a robust technology infrastructure as well as wise strategies to move teaching totally online.

**IV. Conclusion**

This study gathered information regarding influence of technology usage and the role performance of secondary school teachers in the COVID-19 pandemic era in Lagos State, Nigeria. Although the COVID-19 pandemic disrupted student education in Nigeria, similar to many other countries, the government was able to respond in a way that reduced the decreased learning among Nigerian students. Many of the teachers agreed that they were aware about the technology usage in education and that technology usage during COVID-19 made learning accessible to students and thus teachers were able to perform their role. Also, many of teachers used smart phone, Whatsapp call, Zoom, and laptop computer in teaching the class and there was no significant influence on technology usage based on difference in teachers’ academic qualification, gender or school type. It was also affirmed that, the schools’ online teaching learning was effective and efficient especially the usage of Zoom to conductor class. This enable student to used their smartphone to received lecture any time of the day. One of the challenges issues in technology usage for teaching during the COVID-19 was resources availability. If all resources was provided or made easily accessible in terms of cost and other differentials it will aid effective teaching and teacher role performance .

**Recommendations**

Base on the findings of the study, the following recommendation are made;

1. In order to build back stronger education systems, government will need to apply those teaching initiatives that have proved to be effective during the remote learning phase and integrate them into the regular education system. It is critical to empower teachers, investing in the necessary skills development and capacity building to

exploit the full student learning environment and role performance by teachers during a pandemic or any of such or crisis.

2. Massive training and retraining of Nigerian teachers on the use of remote technologies with a special focus on teaching practically oriented subjects at all educational levels is not an option but a necessity in this new normal. It is therefore imperative that the government creates holistic policy initiatives that identify ways to ensure continuous learning and provide necessary support for both students and teachers during times of crises.

3. The government should establish provisions for teachers to use a range of learning technologies or remote learning tools while generating evidence on which it is more appropriate and suitable in particular contexts such as the nature of the subject or topic and the age range of learners.

4. Technology interventions should enhance teacher engagement with students, through improved access to content, data and networks, helping teachers to better support student learning, where effective use of technology is one of the key principles to ensure cadres of effective teachers.

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