

Teachers' Awareness and Competence in the Switch from Classroom-Based to Online Teaching During COVID-19 Pandemic in Lagos, Nigeria

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Abstract: *In the COVID-19 era, success in online curriculum delivery requires expertise, skills and competence. The study appraised the teachers' awareness and competence in the switch from classroom-based to online teaching during the COVID-19 pandemic in Lagos Mainland secondary schools, Nigeria. The study examined teachers' awareness and competence level in the switch from classroom-based to online teaching using a descriptive survey research design. Random sampling was used to determine the sample size, which comprises 378 public secondary school teachers. A self-developed questionnaire was used to generate data. Cronbach Alpha method was used to determine the reliability of the instrument, and the pilot study yielded a coefficient of 0.83, which was deemed high enough to make the instrument reliable for the study. Frequency counts, mean, and standard deviation were used to analyse the data obtained, while chi-square (χ^2) was used to analyse the null hypotheses at a 0.05 level of significance. Findings revealed that teachers are reasonably aware of the switch from classroom-based to online teaching. However, the results*

demonstrated that teachers have low competence due to a lack of technological resources and technical know-how. Recommendations were made, among others, that teachers should keep up with the latest developments in the teaching field via development programmes. More importantly, teachers should be well-versed in the use of digital to accomplish instructional objectives efficiently, confidently, particularly during COVID-19 when classroom-based instruction was suspended.

Keywords: COVID-19, Teachers' awareness, Teacher competence, Classroom-based instruction, Online teaching.

1. Introduction

The year 2020 began with a world-first novel coronavirus disease, otherwise called COVID-19 pandemic. Not only are the virus being human-to-human transmission disturbing, but respiratory failure and unwavering deaths as a result of the virus have sparked worldwide anxiety (Wilson, Rwothumio & Amwine, 2021). The Federal Ministry of Health declared the first reported case of the pandemic in Nigeria on 27th February 2020, when an Italian resident in Lagos tested positive for the virus. A second case of the virus was registered in Ogun state on 8th March 2020, involving a Nigerian citizen who had contact with the Italian citizen. Nigeria's government implemented a lockdown as a precautionary measure as the COVID-19 virus reached its most dangerous level (Jimola & Ofodu, 2020). On 30th March 2020, a nationwide lockdown was declared in Nigeria, with immediate consequences in the commercial capital of Lagos, neighbouring Ogun, and the nation's capital, Abuja, which are home to nearly 30 million people, in order to contain the spread of COVID-19.

The lockdown aimed to keep the COVID-19 curve flat by reducing reported cases and ensuring that infected people recover quickly. People were expected to remain at home during lockdowns. Also closed, are the locations of interactions such as colleges, universities, hostels, clubs, and religious houses, as well as social events involving more than 20 people and economic activities involving physical interaction (Jinadu, Oyeremi & Rufai, 2021; World Health Organization [WHO], 2020a; Centre for Disease Control and Prevention [CDCP], 2020). This greatly affected classroom-based instruction. More so, during the country's lockdown, a steady stream of new cases emerged, the majority of which were attributed to interstate movements in the form of community transmission.

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Educational institutions in the vast majority of countries worldwide agreed to temporarily suspend classroom-based teaching in favour of an online-based curriculum delivery model. According to UNESCO, "educational institutions in 186 nations, including Nigeria, have closed by the end of April 2020, affecting 74 per cent of the world's total enrolled learners" (Ahn & McEachin, 2017). As a result, the leadership of public and private educational institutions have put in place alternative strategies for students and teachers to proceed with their lessons when attending school is not feasible, and they are working on ways to make schools safe to work in. On the other hand, teachers face major challenges as a result of physical school closures, including transitioning to online education, ensuring a minimum level of contact with students, and promoting students' learning and growth. However, it is unclear to what degree teachers have mastered these challenges and which factors are most important (König, Jäger-Biela & Glutsch, 2020). Therefore, not only does the issue of whether the widespread school closures caused by the COVID-19 pandemic can be compensated for by teachers and students using digital resources arise, but it also raises the question of how teachers' digital competence and opportunities to acquire digital competence led to teachers' mastery of the complexities of the particular situation.

One of the most significant constructs in teacher competence in the affective-motivational field is teachers' self-efficacy (Lauermann & König 2016). According to Bandura (1997 p. 18), teachers' self-efficacy refers to teachers' beliefs about their abilities to succeed in specific circumstances. Thus, for teachers to effectively switch from classroom-based instruction to online curriculum delivery, especially in the global health crisis, they are required to be reasonably aware of and capable of applying technology to pedagogical principles and teaching practice in general. In relation to this, this study set out to appraise the teachers' awareness and competence in the switch from classroom-based to online teaching during the COVID-19 pandemic in Lagos, Nigeria.

1.1 Research Questions

To respond to the above problem, the following research questions were raised to pilot the investigation:

- What is the awareness level of teachers in the switch from classroom-based instruction to online teaching?
- How competent are teachers in the switch from classroom-based instruction to online teaching?

1.2 Hypotheses

The following null hypotheses were proposed and tested at a 0.05 level of significance:

H0₁: There is no significant difference in the awareness level of teachers on the switch from classroom-based instruction to online curriculum delivery.

H0₂: Teachers' competence does not significantly influence the switch from classroom-based instruction to online curriculum delivery.

2. Literature Review

Lagos is the most populous city in Nigeria and the African continent, having a population of 14.8 million as of 2021 (Wikipedia.org, 2021). Lagos initially emerged as a home to the Awori subgroup of the Yoruba of West Africa and later emerged as a port city that originated on a collection of islands, which are contained in the present-day Local Government Areas (LGAs) of Lagos Island, Eti-Osa, Amuwo-Odofin and Apapa. Due to rapid urbanisation, the city expanded to the west of the lagoon to include areas in the present-day Lagos Mainland. This led to the classification of Lagos into two main areas, namely; the Island, and the Mainland (Wikipedia.org, 2021). The mainland LGAs include Surulere, Apapa, and Lagos Mainland. Metropolitan Lagos suburban LGAs include Agege, Amuwo Odofin, Mushin, Oshodi-Isolo and Ikeja (the capital of Lagos State). Like every other state, the secondary education in Lagos state is subdivided into public and private secondary school. Therefore, the focus of this study is on the public secondary schools in Lagos Mainland LGAs.

The world's extraordinary circumstances caused by the novel coronavirus (COVID-19) pandemic, has resulted in school closure in almost 186 countries (Omodan, 2020a). It has become obvious that teachers be educated in using various technical resources to adapt different elements of the

curriculum to the new sense of a pandemic. In these times of pandemic, online curriculum delivery through information and communication technology (ICT) has ceased to be a choice in teaching methodology and has become a requirement to ensure learning continuation (Omodan & Ige, 2021). According to Di Pietro, Biagi, Costa, Karpiński and Mazza (2020), online teaching has a number of advantages, including reducing teacher time away from work and eliminating travel expenses. Despite this, surveys and anecdotal data suggest that many educators in the study area are still ignorant of and unqualified to use technology, even though it will reduce their workload and improve the effectiveness of their classroom time. Further, Fraillon, Ainley, Schulz, Friedman and Duckworth (2019, p. 40) reported that "nearly half of all German teachers (48 per cent) are using ICT in their classroom every day, while only 19 per cent of Nigerian teachers reported doing so". That means that when school closures started, those teachers who already had tech tools at their disposal and were aware of using them in the classroom were obviously ahead of the game.

Teacher's competence can be described as "context-specific, cognitive performance dispositions that are functionally sensitive to situations and demands in certain domains" (Kaiser & König, 2019, p. 599). Cuban and Fullan, cited in Alasoluyi (2015), have identified obstacles to change as either first-order or second-order in their attempts to understand them. Extrinsic obstacles in the context of this study, such as organisational resources or access to facilities, are referred to as first-order barriers. Second-order barriers are more emotional, basic, and personal in nature. In this circumstance, these barriers including, personal values and attitudes. Alasoluyi (2015) argues that second-order barriers are divided into several categories: the definition of job position, beliefs about practice, beliefs about the quality of online teaching, personality factors, and the perception of technology as a support tool rather than an enabler and enhancer of learning. Therefore, online teaching necessitates a transition from conventional classroom-based training (Berge, 2003), while the traditional view of "teacher" appears to be an oracle, authority, and expert (Humbert; Yang; Gasco, Gonzales & Llopis; Berge; Ertmer; Zhao & Cziko, cited in Ortega-Sánchez & Gómez-Trigueros, 2019).

On the other hand, online learning delivery necessitates a reorganisation of roles, with teachers taking on the role of guide and learners taking on the role of an explorer. Instructors are about to shift from being only owners of a collection of information and wisdom to facilitators who see the student as someone who also helps them understand (Gasco, Gonzales & Llopis, 2004). Other researchers looked into the dangers that this shift caused by COVID-19 could pose. Many teachers and teaching professionals, enthralled by the prospect of imparting knowledge, fear the dilution of their professional reputation and role as 'expert'. Yusuf (2014 p. 139) observes that "when it is understood that teachers' fundamental conceptions of education and skills are involved- that is, their occupational identity, sense of competence, and self-concept," "there are some profound changes at stake."

Teachers and many instructors have different conceptions about the quality of online curriculum delivery. For teachers, school closures and the required adaptation of online teaching in the current context also "requires questioning one's belief systems and notions about what constitutes content and content coverage, what constitutes learning and engaged time, and even what behaviours define teaching (Yusuf, Maina & Dare, 2013 p. 54). Instructors are also concerned that the standard of online education is inferior to that offered in conventional classrooms (Hodges, Moore, Lockee, Trust & Bond, 2020). Ortega-Sánchez and Gómez-Trigueros (2019) pointed out that many teachers might have never had a good online experience and therefore have no real benchmark to compare against. Another aspect to consider is the teacher's view of the need for new technology training. According to Amhag, Hellström and Stigmar (2019), 50.0 per cent saw a medium need, and 37.0 per cent saw a strong need suggesting low professional skills to integrate digital devices into teaching, and that requires mastering specific applications. Furthermore, respondents who indicated low competence in the area of teaching digitation reported a statistically significant higher need for training, according to the analysis conducted by Amhag, Hellström and Stigmar (2019). A recent study conducted by Colás-Bravo, Conde Jiménez, Reyes de Cózar and El Desarrollo de La (2019) that proposes a model for the development of teacher digital competence based on a sociocultural approach revealed a medium level of digital competence development and concluded that there was still much to be done in terms of teacher training in ICT, with

strategies for the development of this ability in their students being important. In the opinion of the researcher, the levels of competence that will make teachers a designer of educational applications and the right attitudes in the use of technologies in the classroom are due for development.

According to Eickelmann and Gerick (2020, p. 34), teachers were required to "adapt to online teaching, which requires them to use a variety of digital tools and resources to solve problems and implement new teaching and learning strategies. Teachers were required to maintain contact with their students in addition to their instructional goals to account for the social integration of their learning groups." Technology can be used to support and enhance online curriculum delivery in a variety of ways. Many digital instruments were available to support teaching even before the pandemic-induced school closures. As a result, video content and multimedia moviemaking have been used in schools, as well as computer-aided teaching and portable devices (Marshall, 2002 in Huber & Helm, 2020), and during the pandemic-induced school closures, new uses of technologies such as podcasting, google classroom, zoom, WhatsApp, blog, lecture maker etcetera are constantly emerging (Oyeniran, Oyeniran, Oyeniyi, Ogundele & Ojo, 2020; Omodan, 2020b). In the classroom, different technologies provide different kinds of content and serve different purposes—where technology is used as a tool that can be applied to a variety of goals in the learning process and as a resource to help develop higher-order thought, innovation, and research skills despite the fact that the transition to online teaching was unexpected and rapid as a result of COVID-19. Based on the above, it is critical to assess teachers' awareness of the shift from classroom-based instruction to online teaching and determine teachers' competence in the switch from classroom-based instruction to online teaching in Lagos, Nigeria.

3. Methodology

The study adopted a descriptive survey research design to investigate the opinions of participants in this research. According to Cohen, Manion and Morrison (2007), descriptive survey research is concerned with the following: existing circumstances or relationships; prevalent practices; held values, points of view, or attitudes; ongoing processes; felt effects; or emerging patterns. Because of the consequences that are being felt, such as school closures caused by the COVID-19 pandemic, descriptive survey research was deemed appropriate in the current study. The sample size was calculated using the sample size table recommended by Research Advisors (2006). According to Research Advisors (2006), the sample size needed for the population of 10,000 to 25,000 people is 378. The sample size was determined using a simple random sampling technique. The hat and draw method of random sampling was employed to obtain the sample size. Serial numbers of the elements in the sampling frame were recorded on pieces of papers folded and mixed thoroughly before the researcher asked to pick them at once without replacement. No stringent criteria were placed on the selection of the sample, rather than the fact that every member of the population has an equal chance of being chosen. Data were collected using a standardised questionnaire created by the researcher. The questionnaire was divided into two parts, "A and B". Part 'A' elicit information on the awareness level of teachers while part 'B' sought the opinion of respondents on teachers' competence in the switch from classroom-based instruction to online teaching. The instrument was a four-point rating scale with a criterion mean of 2.5 and weighted as follow: strongly agree (SA) = 4, agree (A) = 3, disagree (D) = 2, and strongly disagree (SD) = 1. To ensure that the instrument measure what it was intended to measure, the instrument was validated by two experts in the Department of Education and one in Measurement and Evaluation, all in National Teachers' Institute, Lagos. The instrument's reliability was determined through a pilot study that produced a Cronbach Alpha coefficient of 0.83, which was deemed high enough to make the instrument reliable for the study. Data collected in the study were analysed using descriptive and inferential statistics. At the descriptive level, frequency counts, mean, and standard deviation were used to answer the research questions, while at the inferential level, chi-square (χ^2) was used to test the null hypotheses at the 0.05 level of significance.

4. Results and Analysis

The data collected through the administration of the questionnaire were analysed in this section. Frequency counts, mean, and standard deviation were used to address the study's research questions, while the null hypotheses were also tested using chi-square. See below analysis.

Research Question 1: What is the awareness level of teachers in the switch from classroom-based instruction to online teaching?

To answer this research question, five items were developed on various issues related to the awareness level of teachers in the switch from classroom-based instruction to online teaching. Table 1 summarises the analysis.

Table 1: Awareness level of teachers in the switch from classroom-based instruction to online teaching

S/N	Item Statement	SA	A	D	SD	Mean	SD
1.	Teachers are fully aware of the procedures required to switch from classroom-based instruction to online curriculum delivery.	122	50	87	119	2.547	1.164
2.	Teachers are aware that to switch from classroom-based instruction to online curriculum delivery involves serious engagement and testing of new knowledge.	104	159	33	82	2.916	1.251
3.	Teachers are aware of and have comprehensive knowledge of the online curriculum delivery.	84	86	48	160	2.451	1.192
4.	Teachers are knowledgeable about how to deal with media-related behavioural issues (hounding on the internet, internet obsession).	117	134	44	83	3.381	1.252
5.	Teachers are aware of different digital tools available to support online teaching (such as google classroom, zoom, WhatsApp, lecture maker, etc.).	118	40	10	210	1.706	1.020

Average mean = 2.60, Standard Deviation = 1.17

Table 1 revealed the awareness level of teachers in the switch from classroom-based instruction to online teaching. The table showed that the average response means of 2.60 is higher than the criterion mean of 2.5. More so, 3 items on the table were positive while 2 were negative, demonstrating that teachers are reasonably aware of the switch from classroom-based instruction to online curriculum delivery.

Research Question 2: How competent is teachers in the switch from classroom-based to online teaching?

To answer this research question, ten items were developed on various issues related to teachers' competence in the switch from classroom-based to online teaching. Table 2 summarises the findings of the analysis.

Table 2: Teachers' competence in the switch from classroom-based to online teaching

S/N	Item Statement	SA	A	D	SD	Mean	SD
1.	Teachers possess the required knowledge and understanding to apply digital tools.	121	29	87	141	2.486	1.163
2.	Teachers have the competence to identify topics that are well suited to online teaching.	167	140	48	23	2.882	1.363
3.	Teachers have the competence to help students plan how to study questions or a problem online.	50	31	134	163	1.915	0.018

4.	Most teachers have the technology competence to create and maintain blogs or websites.	45	68	72	193	1.840	0.683
5.	Teachers have the technical-know-how on interpreting the procedures to switch from classroom-based instruction to online teaching.	63	88	172	55	1.217	0.098
6.	Teachers have the technology competence to guide the student source of information online.	26	108	92	152	2.978	0.982
7.	Teachers possesses the required knowledge to create a presentation with simple animation functions.	161	63	92	62	2.854	1.143
8.	Teachers have the technology competence to create curiosity and independent thought in students online.	100	49	162	67	1.081	1.059
9.	The majority of teachers lack the technological skills required to download or upload instructional materials from/to websites or learning platforms for use by students.	179	67	71	61	2.963	1.144
10.	Teachers have prior training to deliver the curriculum using online platforms.	100	34	105	139	1.251	0.206

Average mean = 2.14, Standard Deviation = 0.78

Table 2 revealed the teachers' competence in the switch from classroom-based instruction to online curriculum delivery. The table showed that the average response mean of 2.14 is less than the criterion mean of 2.5. More so, 6 items on the table were negative, while 4 were positive, suggesting that teachers had low competence to switch from classroom-based to online teaching.

Null Hypothesis 1: There is no significant difference in the awareness level of teachers on the switch from classroom-based to online teaching.

Data gathered through the administration of the questionnaire in response to hypothesis 1 was analysed using chi-square (χ^2) statistics. Table 3 summarises the analysis.

Table 3: Summary of Chi-square (χ^2) statistics on the awareness level of teachers

N	χ^2 cal.	α	Df	χ^2 crit.	P-value	Decision
378	86.9	0.05	12	46.09	.003	Rejected

Table 3 revealed that teachers are aware of the switch from classroom-based to online curriculum delivery. The result showed that the χ^2 calculated value of 86.9 is greater than the critical value of 46.09 at $\alpha = 0.05$ and at 12 degrees of freedom. Since the χ^2 calculated was greater than the critical value, the null hypothesis, that there is no significant difference in teachers' awareness in the switch from classroom-based instruction to online teaching, was rejected.

Null Hypothesis 2: Teachers' competence does not significantly influence the switch from classroom-based to online teaching.

Data gathered through the administration of the questionnaire was analysed using chi-square (χ^2) statistics. Table 4 summarises the analysis.

Table 4: Summary of Chi-square (χ^2) statistics on teachers' competence

N	χ^2 cal.	α	Df	χ^2 crit.	P-value	Decision
378	15.50	0.05	27	52.7	.401	Retained

Table 4 showed that teachers' competence does not significantly influence the switch from classroom-based instruction to online teaching. The result showed that the χ^2 calculated value of 15.50 is less than the critical value of 52.7 at $\alpha = 0.05$ and at 27 degrees of freedom. Since the χ^2 calculated was less than the critical value, the null hypothesis, that teachers' competence do not significantly influence the switch from classroom-based instruction to online curriculum delivery, was retained.

5. Discussion of Findings

Amid the COVID-19 crisis, almost all leadership of public and private educational institutions in Nigeria decided to take massive action on online teaching. When asked about the various issues related to awareness level of teachers in the switch from classroom-based instruction to online teaching in Lagos, Nigeria, majority had the positive remarks that teachers are reasonably aware of the switch from classroom-based instruction to online curriculum delivery. To support this claim, the result of the hypothesis tested (see table 3) was statistically significant as the calculated value was greater than the critical value. Hence, the null hypothesis, that there is no significant difference in teachers' awareness level in the switch from classroom-based instruction to online teaching was rejected. This outcome implied that teachers' use of digital tools in classroom activities is still at the minimum. This finding is consistent with Fraillon et al. (2019), who found that, on average, 48 per cent of teachers use ICT every day at school in their classroom. That means that when school closures started, those teachers who already had software tools at their disposal and were familiar with how to use them in the classroom were obviously in a better position to switch from classroom-based instruction to online teaching. Yusuf (2014) also posited that teacher awareness and competence are fundamental to any change in classroom activities.

In seeking to understand teachers' competence in the switch from traditional classroom-based to online teaching, findings revealed that although teachers are reasonably aware of the shift, but do have low competence due to a lack of technological resources. To uphold this claim, the result of the hypothesis tested was not statistically significant ($p\text{-value } .401 > 0.05$). Hence, the null hypothesis, which states that teachers' competence does not significantly influence the switch from classroom-based instruction to online curriculum delivery, was retained. The findings corroborated the findings of Ortega-Sánchez and Gómez-Trigueros (2019) that teachers' awareness of the shift from face-to-face instruction to online teaching does not guarantee that they have gained sophisticated digital competence in general. Many teachers have never had a good online experience and therefore have no real benchmark to which to compare. The findings contrast with Amhag, Hellström and Stigmar (2019), who found that 50.0 per cent of respondents perceived a medium need and 37.0 per cent vital need. According to the findings, respondents who indicated low competence in online teaching had a statistically significant higher need for training. Some teachers are having trouble using these channels because they lack the technical know-how in using these digital tools. They have a small amount of time to learn how to use them, causing the switch from classroom-based to online teaching to be delayed. Although teachers were aware of the switch from classroom-based to online teaching, nonetheless, they lack the competence required to test the new knowledge.

6. Conclusion and Recommendations

Many counties around the world have put in place alternate ways for students and teachers to continue their lessons when attending school is not feasible due to a pandemic. It can be inferred that teachers are fully aware of the procedures required to switch from classroom-based to online teaching. This may be due to the fact that some teachers were already using digital tools before the outbreak. Even though teachers are aware of these networks and that they exist, this study raised concerns. One big issue is the teachers' lack of competence to apply technologies to pedagogical

concepts and teaching practice due to insufficient or lack of technological resources. This suggests that teachers will only demonstrate competencies in digital curriculum delivery when appropriate technical resources are offered.

In light of this conclusion, recommendations were made that Teachers should stay current in the classroom by attending conferences, seminars, workshops, and exhibitions related to their field of study or discipline. A teacher will be able to keep up with the latest developments in the teaching field via staff development programmes. Government should improve by providing digital devices for the teacher education institutions to better respond to the needs and demands of students, which the ongoing COVID-19 pandemic has exacerbated. In addition, the work atmosphere for teachers should be appropriate, clean, and convenient, which can be achieved by providing beautiful offices, nice and comfortable chairs and tables, as well as adequate facilities such as computers and other digital infrastructures by educational agencies, stakeholders, and the school authority. Lastly, teachers should be well-versed in the use of digital technologies so that they can use them to accomplish instructional objectives efficiently, confidently, and competently, mainly when classroom-based instruction is suspended.

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