RELEVANCE AND UTILIZATION OF ONLINE LESSON FOR INSTRUCTIONAL DELIVERY AMONG SECONDARY SCHOOL MATHEMATICS TEACHERS IN CENTRAL SENATORIAL ZONE, NIGER STATE

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Abstract

This research investigated the influence of online lesson on instructional delivery among the secondary school teachers in central senatorial zone, Niger state. A survey research design was adopted for this study where online lesson teachers questionnaire (OLTQ) was designed in which the respondents filled freely according to their uninterrupted opinion. A population of 977 secondary school mathematics teachers was targeted out of the eight (8) local government that constituted the zone c senatorial zone while, 349 teachers were randomly selected from the six (6) local governments. The mean and standard deviation (SD) were used as instrument for data analysis while, YouTube was used as tools for data collection for the. The study further recommends among the other things that, a functional educational technology centres should be made available and accessible in all the secondary schools in Niger state and an adequate ICT training should be given to the mathematics teachers for them to meet up with the 21st issues in mathematics education and operate in line with the new sustainable development goals realities.

Keywords: Online lesson, influence, instructional delivery, secondary schools and mathematics.

Introduction

We live in a fast-changing world that is becoming more scientific and more technological. As this transformation occurs, education in all forms and all subjects is not left out. The introduction of Information and Communication Technology to the teaching and learning process has directed to improving the advanced learning environment and the process of knowledge acquisition and dissemination at all levels of education. The role of science and technology education is central to industrial development of any country. Online teaching does have advantages, such as: availability to students, the didactic value of online tools in teaching, the development of digital skills (Nikolić & Milojević, 2020), the temporal and spatial dimension, cost-effectiveness, flexibility (Sadiku et al., 2018), better availability of class materials, and a more individualised education process (Dukić & Mađarić, 2012).

There is therefore, the need to re-position the delivery of science and technology education in to meet the current global technological explosion through an all-inclusive functional policy and the provision of legal framework to guide the mobilization of appropriate interventions for the sub-sector (S & TE, 2018). In some countries of the world, online learning has been adopted. However, in the views of some researchers, online learning has not been instituted in most of the Secondary Schools in

Nigeria. In Schools where it is instituted, practices, available materials and resources are the major problems, especially in public Secondary Schools in Nigeria. The low integration of online learning systems in Nigerian Secondary Schools may not have been unconnected with some challenges and problems as the case may be. The introduction of Information and Communication Technology to the teaching and learning process has given rise to improvement of the learning environment and the process of knowledge acquisition and dissemination at all levels of education. The technological diversity in this 21st century has therefore made this search for pedagogical tools even more confusing and demanding as numerous digital media and resources could be adopted into instructional processes to enhance instructional practices and delivery; thereby, leaving teachers with the capability of making right choices of what and when to adopt a particular medium. However, it has been observed that today's students are more technologically knowledgeable than their older generations and therefore tend to use different, sophisticated and portable teaching and learning resources, especially for watching, playing games and communicating with friends. (Williams & Eberechuku, 2018). With the vital things ICT offers, Secondary schools are now seeking new ways to restructure their educational curricula and classroom management to bridge the gap existing in education by use of technology. Technology as a tool if effectively used can make teaching and learning simpler, more efficient and more productive, especially in Secondary schools where the majority of the students are developed enough to handle the different technological tools properly (Yusuf, et al., 2018). The advantages that technology provides to training and learning include not only the possibility of one-on-one interaction for every learner but also the ability to simulate new ideas, the chance to try things out at one's own pace and to fail in private without the fear of ridicule from other students (Hary, 2022).

When it comes to technology, Orlando and Attard (2015) stated that "teaching with technology is not a one size fits all approach as it depends on the types of technology in use at the time and also the curriculum content being taught" (p. 119). This means that the incorporation of technology provides additional factors for consideration in terms of teaching pedagogy and construction of learning experiences. Despite this, it is "often taken for granted that technologies can 'enhance learning'" (Kirkwood & Price, 2014, p. 6) with the prevailing assumption becoming that technological incorporation, learning enhancement, and student engagement are mutually and inextricably linked. However, in creating individually tailored differentiated instruction for each learner within and across each cohort, additional workload pressures on those seeking to engage with the online environment can be created as teaching staff seek to respond, often reactively, to the individual learning and engagements needs of each cohort. Innovative and interactive content delivery and has proved to be more appealing among students. Online teaching and learning are designed to reach and engage the modern learner on a one-to-one basis anywhere, anytime. A popular one involves Massive Open Online subjects that have grown to involve many researchers and research institutions (Sadiku, et al., 2017). The reasons for offering online subjects include easy and convenient access for students. In a similar vein, barriers to the adoption of online teaching include a lack of school commitment and high costs of implementation and delivery of the courses (Bollger and Wasilik, 2019).

Performance is the act of presenting something, or, done successfully, especially with efforts or skills. According to the research, performance is the end product of the learning experience. The academic performance of a student in a particular subject or course is determined by specific or general goals acquired. Performance in Computer Science goes to highlight the effort or skill put in to acquire or realize success in computer as a science subject. Most research findings in students' performances in the sciences are also applicable to computers as a science subject. Therefore, the teaching of computers as a science subject requires an appropriate

technological tool with different pedagogical methods that will enhance meaningful teaching and learning of the subject. Performance is an act to boost individuals' knowledge and increase children's preparedness for future endeavours. As the standards-based education movement has taken hold in recent decades, measuring and reporting student performance has become an even more critical component of public education. State and federal accountability systems have raised the bar for school performances and have led to an increased reliance on standardized tests of student success. Academic performance is important because it is strongly linked to the positive outcomes we value.

However, the relevance and utilisation of online Lessons on Instructional Delivery among Secondary School Mathematics Teachers in North Zone C, Niger State is numerous, despite the beneficial role that Online Lessons plays, there are some other challenges in using Online Lessons in teaching and learning, for instance, the limited access to the online gadgets because of low bandwidth on the network. Furthermore, not all teachers have the knowledge and capacity to use online lessons.
However, it's on these notes above, that the researcher wants to find out the relevance and utilisation of online Lessons on Instructional Delivery among Secondary School Mathematics Teachers in North Zone C, Niger State.

Statement of the problem:

The integration of technology in mathematics education seems to be a prevailing issue that is it difficult for the mathematics teachers to embrace the paradigm shift to technological base pedagogy, despite the prerequisite position of mathematics as a subject that unlock the way for further specialisation, yet students suffered mass failure not because of its difficulty but because the way and manner it is being taught (WAEC Examiner report, (2018-2022) specifically the used of online lessons has become increasingly relevant in secondary school class rooms while, there is limited research on how online lesson impact the instructional of mathematics teachers. However, the purpose of this research is to investigate the impact of the online lessons on the instructional delivery of secondary school mathematics teachers, the study implored how the integration of online lesson affects the teaching methods, strategies and overall effectiveness of mathematics instruction in secondary school by examining the influence of online lesson on instructional delivery, this research seeks to provide insight into the potential benefits and challenges associated with incorporating with online learning platforms in mathematics education.

Research objectives:

> To determine the relevance on-line lessons knowledge influence for instructional delivery among the secondary school mathematics teachers.
> To determine the level utilization of online lesson for instructional delivery among the secondary school mathematics teachers.
> To find out the challenges of Mathematics teachers utilization of online for instructional Delivery

Research questions:

> What are the relevance of online lesson for instructional delivery among the secondary school mathematics teachers?
> To what extent do the secondary school mathematics teachers utilize online lesson knowledge for instructional delivery?

> ➢ What are the challenges of Mathematics teachers on online knowledge for their instructional Delivery?

Methods

Research design:

The research adopted survey design in which the data is collected using 10 items online lesson teachers interest questionnaire (OLTIQ) to measure the influence of online lesson on instructional delivery among the mathematics teachers in central senatorial zone, Niger state.

Population:

The population of the study consisted of all the Mathematics Teachers in the North Zone C of Niger state, Nigeria which consisted of 977 Teachers.

Sample and Sampling Techniques:
Simple random sampling technique was used to select six (6) local government areas among the 8 local Governments; in simple random sampling technique, every member of the population has an equal chance of being selected as a sample to represent the Population.
From the population of 977 Mathematics Teachers a sample size of 349 teachers was selected. The sample size was obtained using online application of Raosoft software. The samples obtained tallies with Awotunde and Ugodulunwa (2018) who recommended 30% of the population to be the minimum sample in survey research.

Data Analysis:
The data was collected using online lesson teachers questionnaire OLTQ while, YouTube was used as tools for data collection and was analysed using simple descriptive statistics of mean and standard deviation to answer the foregoing research questions as follows:

Results:

Research question one: What is the relevance of online lesson for instructional delivery among secondary school mathematics teachers?

Table 1. Level of relevance of line lessons lesson

S/N	Items	SD	D	A	SA	Total	M	STD	DC
1	Using twitter online lesson knowledge makes mathematics teaching easier for me.	10	05	184	150	349	3.5	0.67	A
2	Adopting twitter online lesson knowledge when teaching mathematics, generate instructional complexity with me.	65	95	120	69	349	2.8	1.03	D
3	Applying twitter online knowledge in teaching mathematics brigs about good student teacher relationship.	70	58	141	80	349	2.6	1.06	A
4	Teaching students using twitter online lesson knowledge, make it easier to the students to solve common examples.	15	20	166	148	349	3.2	0.76	A

5	I find mathematics teaching more interesting when using twitter online knowledge pattern.	15	05	169	160	349	3.4	0.72	A
6	Integrating twitter online lesson into mathematics education, easier than the traditional method of instruction.	57	47	143	102	349	2.8	1.03	A
7	The twitter online knowledge, always increase my instructional capacity when teaching mathematics.	74	54	140	81	349	2.6	1.06	A
	Average Mean and Average STD						2.10	0.9	A

Disagree (D) = (1.5-2.49); Agree (A) = (2.50-4.00)

Table 1 show that participants expressed positive responses on majority of the items raised. This indicated the online lesson knowledge has positive influence on instructional delivery as they agreed with most of the items seeking their responses. The average mean was 2.10 which were above the mean criterion of 2.5. This indicated that, mathematics teachers were agreed with the positive influence of online knowledge to instructional delivery. The standard deviation was relatively high which implies that the respondents' responses revolved above the mean.

Research question two: To what extent do the secondary school mathematics teachers utilize online lesson knowledge for instructional delivery?

Table 2. Level of online lesson knowledge utilization

S/N	Items	SD	D	A	SA	Total	M	STD	DC
1	I presents lessons online at the course of instruction	61	54	130	104	349	2.9	1.08	A
2	I uses online lesson in some of my subjects	73	55	140	81	349	2.7	1.05	A
3	I uses online lesson in all my subjects	140	168	29	12	349	1.7	0.75	D
4	Online lesson is more convenient than face to Face learning.	20	10	186	133	349	3.2	0.76	A
5	I use online lesson to engage students for learning from their homes	13	28	178	130	349	3.3	0.76	A
6	I can assess my students online	10	26	170	143	349	3.9	0.76	A
7	Online lesson is helpful in improving students learning.	66	49	132	102	349	2.8	1.07	A
	Average Mean and Average STD						2.9	0.9	A

Disagree (D) = (1.5-2.49); Agree (A) = (2.50-4.00)

Table 2 revealed that majority of the respondents were utilising online lesson knowledge for teaching as they agreed with most of the items provided. The average mean was 2.9 which were above the mean criterion of 2.5, this indicated that, mathematics teachers utilised online lesson knowledge during instruction. The standard deviation was also relatively high which implies that, the respondents' responses revolved above the mean.

Research Question Three: What are the challenges of Mathematics teachers on online knowledge for their instructional Delivery?

Table 3. Challenges of Mathematics teachers on online knowledge

S/N	Items	SD	D	A	SA	TOTAL	M	STD	DC
1	There is constant electricity to implement online learning	160	180	04	05	349	1.6	0.58	D
2	There is enough bandwidth of the internet in my School	66	94	122	67	349	2.5	1.01	A
3	I'm competent to work with the internet	110	150	48	41	349	2.1	0.10	D
4	Online learning is not time consuming	15	25	161	148	349	3.3	1.9	D
5	All my students can purchase a simple laptop or smart phone for learning	115	155	44	35	349	1.9	0.93	D
6	All my students have the skills to work with the internet	105	160	50	34	349	2.2	0.81	D
7	All my students are interested for online learning.	106	164	48	31	349	2.0	0.89	D
	Average Mean and Average STD						1.10	0.9	D

Disagree (D) = (1.5-2.49); Agree (A) = (2.50-4.00)

Table 3. Majority of the respondents in the study shows that, there were a lot of challenges on online learning as teachers disagreed with most of the items in the responses. The average mean was 1.10 which was below the mean criterion of 2.5; this indicated that, there were a lot of challenges on online knowledge for instructional delivery. The standard deviation was relatively low which implies that the respondents' responses revolved round the mean.

Discussion

The result of the study shows that, participants expressed positive responses on majority of the items raised. This indicated the online lesson knowledge has positive relevance on instructional delivery as they agreed with most of the items seeking their responses. The average mean was 2.10 which were above the mean criterion of 2.5. This indicated that, mathematics teachers were agreed with the positive influence of online knowledge to instructional delivery. The standard deviation was relatively high which implies that the respondents' responses revolved above the mean. However, the result of the study revealed that, majority of the respondents were utilising online lesson knowledge for teaching mathematics as they agreed with most of the items provided in the online lesson teachers interest questionnaire (OLTIQ). The average mean was 2.9 which were above the mean criterion of 2.5, this indicated that, mathematics teachers utilised online lesson knowledge during instruction. The standard deviation was also relatively high which implies that, the respondents' responses revolved above the mean.

Conclusion

The study investigated the relevance and utilization of online lesson learning on instructional delivery among secondary school mathematics teachers in Niger state central senatorial zone (zone c). The result of the study shows the significant relevance of online lesson learning among secondary school mathematics teachers in the research communities while, the

secondary school mathematics teachers faced a lot of challenges in utilizing the online lesson learning in their classrooms instructions.

Recommendations

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

➢ The Niger state ministry of education and that of science and technology should embrace the paradigm shift towards technology-based teaching in the state own secondary schools rather than insisting on traditional method.
➢ Functional educational technology centres should be made available and accessible in all the secondary schools in Niger state and
➢ An adequate ICT training should be given to mathematics teachers for them to meet up with the 21st issues in mathematics education and operate in line with the new sustainable development goals realities.
➢ The federal ministry of education and other stakeholders should ensure a holistic implementation of the national policy on science and technology education (S & TE)

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