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Role of Library and Information Science Virtual Classrooms in Curriculum Delivery: Nigerian Teachers' Perception

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Abstract

The study investigated teachers' perception of the use of Library and Information Science virtual classrooms in curriculum delivery in Nigeria in post COVID 19 era. The study adopted a descriptive survey research design. Simple random sampling technique was used to draw a sample of 150 (68 male and 82 female) secondary school teachers in Nsukka LGA. Teachers Perception of Use of Library and Information Science virtual classrooms Questionnaire was used to collect data. The reliability of the instrument was 0.76. Data were analyzed using mean and standard deviation to answer the research questions and t test to test the hypotheses at .05 level of significance. Results indicates that male and female teachers agree that there are perceived benefits in the use of virtual classroom in curriculum delivery, but that there are perceived problems associated with the use of virtual classroom in curriculum deliver. Results of hypotheses indicate that there is no significant difference in the mean perceptual rating of male and female teachers on the benefits of the Library and Information Science virtual classrooms on curriculum delivery. Also, results indicate that there is a significant difference in the mean perceptual rating of male and female teachers on problems associated with the use of Library and Information Science virtual classrooms on curriculum delivery. It was recommended among others that facilities should be provided in schools to aid the use of Library and Information Science virtual classrooms as an alternative to physical classrooms.

Keywords: Teachers' Perception, Library and Information Science Virtual Classroom, Curriculum Delivery.

Introduction

The impact of the novel corona virus disease known as COVID-19 on human activities cannot be easily forgotten. The outbreak of COVID in Wuhan-China in 2019 has change the way many activities are performed. Problems faced in curbing the spread of the disease led to the adoption of strict measures by many countries. Due to this, the World Health Organization (2019)

recommended some strict measures like physical distances and social distances be followed in conducting most day-to-day activities. The implication is that people can no longer gather in large numbers. The implementation of these standards has affected the educational activities in most countries in the world. The reason is that education is a social activity in which learners and the teacher gather together for teaching and learning. However, education is a vital tool in the hands of every nation because it is the only tool that would aid the development of such nations, which means that educational activities would still go on despite the negative impact of the COVID virus. Available statistics from the United Nations Educational, Scientific and Cultural Organization (UNESCO) (2020) indicates that about 1,186,127,211 learners worldwide were affected, or many learners about 67.7% from about 144 countries could not go to school because of school closure. Therefore, it became necessary for nations to change their learning systems.

Hence, government and stakeholders must look inward and come up with strategies that would enable continuous curriculum delivery while maintaining physical and social distances. This led to a paradigm shift from the traditional face-to-face crowded and overcrowded classes to the use of technologies that could aid curriculum delivery without much physical contact. The World Bank (2020) reported that many countries had implemented different learning systems due to school closure because of COVID. For instance countries like China implemented an online learning system, Bulgaria e-learning system, Finland, distance learning, digital learning environments and solutions (Rasmitadila, et al, 2020). Other countries especially the developing countries like Nigeria made recommendations for the use of online learning and other learning systems devoid of crowding. One of the learning system recommended by Nigerian government is the virtual classroom.

A virtual classroom is web-based environment that allows an individual without traveling, participate in live training events, listen to lectures, participate in the laboratory exercises, ask questions and interact very well with the teacher and others (Anekwe, 2017). Hence, Library and Information Science virtual classrooms are defined as online environments that enable students and instructors to communicate synchronously, using audio, video, text chat, interactive whiteboard, application sharing, instant polling, and other features, as though they were in a physical face to face classroom. It is done with a live instructor facilitating the training and everyone logs in at a set time and can communicate directly with the teacher and with each other which allows for live interaction between the teacher and the learners while engaging in learning activities (Racheva, 2018). The virtual learning classroom is a guided exercises to motivate and increase student learning and allows for immediate feedback, interactions between the teacher and learners and learners with peers (Yılmaz, 2015). In this learning platform, students through video conferencing can interact and participate in various individual or group activities while feeling as though they were meeting face to face (Martin & Parker, 2014). Just like the physical classroom, the virtual classroom allow for immediate feedback, support consensus and decision-making in group activities with ‘just-in-time clarification and information, provide guided pacing and discipline in learning, and encourage development of group cohesion and a sense of community (Schullo et al, 2007). Hence, the learning platform has the characteristics of the physical classroom but can be done without any form of physical contacts which could be useful in maintaining social and physical distancing.

The virtual learning has many advantages which include: help in good class organization, provides the learners with the opportunity of gaining learning experiences frequently without tampering with their leisure time, has the capability of employing the services of most experienced

personnel in different areas of need, increases group cohesion and mutual support more especially in remote classrooms, enables the students to develop a range of communicative skills that enable them to perform creditably in class, it is cost effectiveness to the student, and the teacher can easily re-use his materials and can easily get materials elsewhere, among others (Anekwe, 2017). According to Lokie (2011), virtual learning expands the possibility of using internet facilities, platforms, satellite links, and related system to access, analyse, create, exchange, and use data, information, and knowledge in unimaginable ways. However, the use of the virtual classroom has its own demerits which include: staff inefficiency and low productivity will seriously affect the students, there is the problem of training personnel, there is no warmth teacher-student relationship in virtual classroom, effective participation in virtual classroom requires robust hardware and a broad band internet connection, and virtual impaired persons cannot benefit from virtual worlds.

The above merits and demerits of virtual classroom could be perceived differently by different persons because what could be considered a merit to an individual may be considered a demerit to others. Perception is the organization, identification, and interpretation of sensory information in order to represent and understand the presented information, or the environment (Schacter, 2011), the way individuals recognize and interpret information they gathered through their senses (Williams, 2016). Perception is shaped by the recipient's learning, memory, expectation, and attention. This also includes how they respond to certain situations with the given information. Therefore, perception represents individuals' view about objects, strategies or events.

Previous studies on teachers' perception about Library and Information Science virtual classrooms indicates that virtual classroom use was viewed favourably by teachers (Falloon, 2012). Another study (Al-Qahtani, 2019) revealed that students and teachers have positive attitudes toward teaching and learning through English as a Foreign Language virtual classes, and

they also agree that virtual courses enhance communication skills. However, another research (Todd, 2020) in a study on teachers' perception of the shift from the classroom to online teaching reported that teachers were undecided about the benefits of online teaching citing practical advantages but also highlighting difficulties in achieving some English language objectives and in gauging student reactions. Another study (Kulal & Nayak, 2020) on teachers and students' perception on online classes reported that teachers are facing difficulties in conducting online classes for lack of proper training and development for doing online classes and technical issues. In a study (Cuadrado-García, et al 2010) on gender differences in e-learning use and assessment, revealed that there are few differences between male and female students in their use of e-learning and their motivation and satisfaction.

The findings by Cuadrado-García et al could mean that gender differences may play a part in the perception of students as well as teachers on the use of virtual classrooms. Gender refers to the differences the culture or society places on masculinity and femininity (Fomsi & Orduah, 2017), It also describes the personality traits, attitudes, behaviours, values, relative power, influence, roles and expectations that society ascribes to the two sexes (Eze, 2013). The above definition points to the fact that men and women within a given society may have different attitude, behaviours and value system, but it is not explicitly clear how being a male or female could result to differences in behavioural pattern. Accordingly, with regards to technology usage, García-Gil and Andreu (2017) explained that male and females use technology differently. While females use technologies to increase their social and family relationships, males use computers in more playful contexts. Besides, women have had the most difficulties gaining access to and using electronic resources (Cohoon, 2011). This could influence the way male and female teachers perceive the integration of such technology for curriculum delivery.

The position is supported by available literature which indicates that there exist gender difference in the perception and use of virtual learning and other ICT related learning. For instance, research report (Mahmood, 2012) indicates that female students are reported to have less confidence on using computer than males, females exhibited more negative views and perceptions towards the use of computers than males (Majuto & Gilbert, 2015). In line with the findings, reports indicate that gender independently influence students' perceptions of online learning (Ashong & Commander, 2012). This is a pointer to the fact that there could exist gender difference in the perception and use of ICT by male and female teachers in Nigeria. However, García-Gil and Andreu (2017) reported that there are no differences between males and females in the use of ICT in the classroom.

This controversies as usual make research reports on gender differences mixed, contradictory and unending. The implication is that more studies are required to investigate the influence of gender on teachers' perception. Besides, there exists a lack of literature evidence on the influence of gender on the perception of teachers on the use of Library and Information Science virtual classrooms in Nigeria which has created lacunae needing to be filled. This underscores the need for the present study which sought to investigate the influence of gender on teachers' perception on the use of Library and Information Science virtual classrooms on curriculum delivery in Nigeria in post COVID 19 era.

Purpose of the Study

The purpose of the study is to determine the influence of gender on teachers' perception on the use of Library and Information Science virtual classrooms in curriculum delivery in Nigeria in post COVID 19 era. Specifically, the study seeks to determine:

1. The perception of male and female teachers on the benefits of Library and Information Science virtual classrooms on curriculum delivery
2. The perception of male and female teachers on problems associated with the use of Library and Information Science virtual classrooms on curriculum delivery

Research Questions

The following research questions were posed to guide the study

- 1 What are the mean perceptual ratings of male and female teachers on the benefits of Library and Information Science virtual classrooms on curriculum delivery?
- 2 What are the mean perceptual ratings of male and female teachers on problems associated with the use of Library and Information Science virtual classrooms on curriculum delivery?

Hypotheses

The following null hypotheses were formulated for the study and were tested at 0.05 level of significance.

H₀₁: There is no significant difference in the mean perceptual rating of male and female teachers on the benefits of Library and Information Science virtual classrooms on curriculum delivery

H₀₂: There is no significant difference in the mean perceptual rating of male and female teachers on problems associated with the use of Library and Information Science virtual classrooms on curriculum delivery

Methods

The study adopted a descriptive survey research design. Eze et al. (2020), Ezema et al. (2021), Ezeaku et al. (2021), Okeke et al. (2020a, b), Ugwuanyi et al. (2020), Okenyi et al. (2021), have used this design in similar studies. The study was conducted in Nsukka local government area, Enugu State, Nigeria. The population of the study consisted of. 1 937 (629 male and 1 308

females) teachers in 32 public secondary schools within Nsukka LGA. The sample of the study was 150 (68 male and 82 female) teachers drawn using two stage sampling technique. In the first stage, 15 schools were drawn using simple random sampling technique and in the second stage, 10 teachers were drawn per school using simple random sampling technique. One instrument titled 'Teachers Perception of Use of Library and Information Science virtual classrooms Questionnaire' constructed by the researchers was used to collect data. The instrument consisted of section A and B. Section A elicited personal information from the teachers including teacher's gender and school code. Section B contained 20 items in two clusters I and II. Each cluster had 10 items. Cluster I elicited information on teachers' perception on the benefits of virtual classroom on curriculum delivery. Cluster II elicited information on teachers' perception of problems associated with the use of virtual classroom in curriculum delivery. The ratings for each of the items ranged from 1-4 for each of strongly agree, agree, disagree and strongly disagree respectively.

The instrument was face-validated by three experts; two from Measurement and Evaluation unit, Department of Science Education and one from Educational Technology Unit, Department of Arts Education, all from the University of Nigeria, Nsukka. The instrument was later trial-tested on 20 secondary school teachers in Uzo-Uwani LGA. The reliability coefficients of the instrument was established using estimate of internal consistency and applying Cronbach Alpha technique. The reliability coefficients obtained were .71 and .82 for cluster I and cluster II respectively. The overall reliability coefficient of the entire instrument was .76. This means that the instrument was reliable and suitable for use in the study.

The instrument was administered by the researcher on the respondents on the spot and retrieved on the spot upon completion by the respondents. The returned rate of the instrument was 100%. After retrieving the instruments, the researchers entered the teachers' responses on the items

in SPSS version 24 for data analysis. Data were analyzed using mean and standard deviation and independent sample t test. Mean and standard deviation were used to answer the research questions while the t test was used to test the hypotheses at .05 level of significance. Mean score of 2.5 and above was regarded as agreed whereas a mean score below 2.5 was regarded as disagreed to the item.

Results

Table 1: Mean and Standard Deviation of Male and Female Teachers' Perception of the Benefits of Library and Information Science virtual classrooms

	Item statements	Male (n = 68)		Female (n = 82)	
		Mean	SD	Mean	SD
1	Possibility to learn from anywhere at a convenient time	3.22	.73	3.24	.62
2	Saving time and expenses because there is no need to travel	3.26	.61	3.30	.62
3	Has a positive effect on students' learning	3.31	.68	3.15	.72
4	Bring new and modern trends to education	3.44	.69	3.26	.84
5	Provides timely and constructive feedback	3.21	.89	3.35	.60
6	Provides a psychological safe environment	3.35	.57	3.32	.61
7	Forster collaborative learning	2.90	.83	3.34	.57
8	Enhance better teacher control over group interaction	3.62	.57	3.49	.72
9	Provide higher level of interactivity between the teacher and the students	3.28	.75	3.55	.50
10	It is a more focused learning platform	3.38	.77	3.61	.73
	Overall Mean	3.29	.25	3.33	.21

The results in Table 1 generally indicates that male and female teachers strongly agreed to items 1-10 on the benefits of virtual classroom on curriculum delivery. The mean perceptual rating of the male teachers range from 2.90 to 3.62 for all the items. The mean perceptual rating of the females teachers ranges from 3.15 to 3.61 for all the items. All the means for items 1-10 were above the cut of mark of 2.50. Also, the overall perceptual mean rating of male and female teachers on the benefits of Library and Information Science virtual classrooms on curriculum delivery were 3.29 and standard deviation of .25 and 3.33 and standard deviation of .21 respectively. This

indicates that both male and female teachers agreed on the benefits of Library and Information Science virtual classrooms on curriculum delivery. The close nature of the standard deviation means that the perception of male and female teachers on the benefits of Library and Information Science virtual classrooms on curriculum delivery were very similar. Hence, the teachers generally agreed that there are benefits with the use of Library and Information Science virtual classrooms in curriculum delivery.

Tables 2: t-test analysis of the differences in male and female teachers' perception on the benefits of the use of Library and Information Science virtual classrooms

	Mean	SD	n	df	Std. Error	t _{cal}	P-value	Dec.
Male	32.97	2.50	68	148	.38	-1.73	0.085	NS
Female	33.63	2.20	82					

Key: Dec = decision, NS = Not Significant, N = Significant

The result in Table 2 shows that the difference in male and female teachers' perception on the benefits of the use of Library and Information Science virtual classrooms in curriculum delivery was not significant, $t(148) = -1.73, p > .05$. Thus, the hypothesis is not rejected. This is because the exact probability value of 0.085 is greater than 0.05 set as level of significance. Thus, inference drawn is that there is no significant difference in the mean perceptual rating of male and female teachers on the benefits of Library and Information Science virtual classrooms on curriculum delivery.

Table 3: Mean and Standard Deviation of Male and Female Teachers' Perception of Problems Associated with the Use of Library and Information Science virtual classrooms

		Male (n = 68)		Female (n = 82)	
		Mean	SD	Mean	SD
11	There is no warmth teacher-student relationship in virtual classroom	3.06	1.1	3.38	.60
12	The use of virtual classroom is difficult	3.18	.67	2.95	.86
13	It requires high level technical knowhow	3.34	.76	3.23	.63
14	The use of virtual classroom requires so much training	3.29	.60	3.23	.63
15	It cannot be used because of lack of electricity	3.35	.57	3.20	.77
16	Virtual impaired persons cannot benefit from Library and Information Science virtual classrooms	3.46	.50	3.30	.78
17	Does not provide real classroom experiences	3.38	.75	3.30	.86

18	Many schools lack facilities to implement virtual classroom	3.60	.49	3.37	.56
19	It is meant for only teachers that are ICT compliance	3.82	.46	2.89	.89
20	I do not know anything about virtual classroom	3.32	.61	3.56	.50
	Overall Mean	3.39	.19	3.23	.24

The results in Table 4 generally indicates that male and female teachers strongly agreed to items 11-20 on the problems associated with the use of Library and Information Science virtual classrooms on curriculum delivery. The mean perceptual rating of the male teachers range from 3.06 to 3.60 for all the items. The mean perceptual rating of the female teachers range from 2.89 to 3.56 for all the items. All the means for items 11-20 were above the cut of mark of 2.50. Also, the overall perceptual mean rating of male and female teachers on the problems associated with the use of Library and Information Science virtual classrooms on curriculum delivery were 3.39 and standard deviation of .19 and 3.23 and standard deviation of .41 respectively. This implies that both male and female teachers agreed on the problems associated with the use of Library and Information Science virtual classrooms on curriculum delivery. The close nature of the standard deviation means that the perception of male and female teachers on the problems associated with the use of Library and Information Science virtual classrooms on curriculum delivery were very similar. Hence, the teachers agreed that there are problems associated with the use of virtual learning in curriculum delivery.

Tables 4: t test Result of Perceived Problems Associated with the Use of Library and Information Science virtual classrooms

	Mean	SD	n	df	Std. Error	t _{cal}	P-value	Dec.
Male	33.81	1.90	68	148	.356	4.08	0.00	S
Female	32.35	2.40	82					

Key: Dec = Decision, NS = Not Significant, N = Significant

The result in Table 4 shows that the difference in male and female teachers' perception on the problems associated with the use of virtual classroom in curriculum delivery was significant, $t(148) = 4.08, p < .05$. Thus, the hypothesis is rejected. This is because the exact probability value

of 0.00 is less than 0.05 set as level of significance. Thus, inference drawn is that there is significant difference in the mean perceptual rating of male and female teachers on problems associated with the use of Library and Information Science virtual classrooms on curriculum delivery.

Discussion of Findings

The findings of research question 1 indicates that male and female teachers agreed that there are perceived benefits of Library and Information Science virtual classrooms on curriculum delivery. This was supported by hypothesis one which indicates a no significant difference in the mean perceptual rating of male and female teachers on the benefits of Library and Information Science virtual classrooms on curriculum delivery. The findings agree with the findings of Falloon (2012) who reported that virtual classroom use was viewed favourably by teachers. It also converge with the study of Al-Qahtani (2019) who revealed that students and teachers have positive attitudes toward teaching and learning through EFL virtual classes, and they also agree that virtual courses enhance communication skills.

The findings of research question 2 indicate that male and female teachers agreed that there were problems associated with the use of Library and Information Science virtual classrooms in curriculum delivery. The finding collaborates with previous findings from Kulal and Nayak (2020) who revealed that teachers are facing difficulties in conducting online classes for lack of proper training and development for doing online classes and technical issues. However, the result of hypothesis 2 indicated that there is significant difference in the mean perceptual rating of male and female teachers on problems associated with the use of virtual classroom on curriculum delivery. The findings converge with that of Cuadrado-García, et al (2010) who reported that there are few differences between male and female students in their use of e-learning and their motivation and

satisfaction. This could be so because male and female use technology differently (García-Gil & Andreu, 2017), while females are noted to use technology for social and family relationships, males use computers in more playful contexts. This could account for the significant difference in the perception of male and female teachers on the problems associated with the use of virtual learning in curriculum delivery.

Conclusion

The findings indicated that male and female secondary school teachers perceive the use of Library and Information Science virtual classrooms on curriculum delivery to be beneficial. They generally agreed that there are benefits with the use of Library and Information Science virtual classrooms in curriculum delivery. There was no significant difference in the mean perceptual rating of male and female teachers on the benefits of Library and Information Science virtual classrooms on curriculum delivery.

The findings also indicated that male and female secondary school teachers perceive that there are problems associated with use of Library and Information Science virtual classrooms on curriculum delivery. However, there was a significant difference in the mean perceptual rating of male and female teachers on problems associated with the use of virtual classroom on curriculum delivery.

This finding has implications for policy formulation and implementation on the need for relevant stake holders and government to provide facilities and train personnel to facilitate the integration of Library and Information Science virtual classrooms for use in curriculum delivery in post COVID 19 era.

Recommendations

The following recommendations were made based on findings of the study.

- Facilities should be provided in schools to aid the use of Library and Information Science virtual classrooms as an alternative to physical classroom.
- There should be enough training for teachers on the integration of Library and Information Science virtual classrooms in curriculum delivery in schools.
- The Library and Information Science virtual classrooms should be used in curriculum delivery post COVID instead of physical classrooms.

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