



# TEACHERS ATTITUDE AND READINESS FOR VIRTUAL TEACHING IN PUBLIC SENIOR SECONDARY SCHOOLS IN RIVERS STATE

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## ABSTRACT

The study investigated teachers' attitude and readiness for virtual teaching in public senior secondary schools in Rivers State. Globally, technology is being adopted in the provision of goods and rendering of services but the extent to which teachers are digitally ready for virtual teaching in Rivers State remains unclear. The study was guided by seven research questions and seven corresponding hypotheses. Descriptive survey design was adopted for the study. The population of the study was 6,573 teachers in the 289 public senior secondary schools in Rivers State out of which 377 teachers were sampled for the study using multi stage sampling technique. The instrument used for data gathering was questionnaire titled "Teachers' Digital Readiness for the Implementation of Virtual Education Questionnaire". The questionnaire was face and content validated by the researcher's supervisors and three other experts (one in the Department of Educational Management and two in Measurement and Evaluation under the Department of Educational Psychology, Guidance and Counseling) from University of Port Harcourt. The reliability of the questionnaire was determined using Cronbach Alpha statistics and the reliability index of the seven clusters of the questionnaire were 0.82 and 0.88, while the average reliability was 0.87. There were 377 copies of questionnaire administered, while 369 copies were retrieved which indicated a 97.9% retrieval rate. The research questions raised were answered using mean and standard deviation while the hypotheses were tested using z-test at 0.05 level of significance. The result of the study indicated that teachers' readiness in terms of behaviour and belief were to a high extent. The study concluded that teachers were partially digitally ready for virtual teaching. Digital training for teachers was recommended among others.

**KEYWORD:** Teacher Perception, Virtual Tools

## INTRODUCTION

Education in Nigeria like other parts of the world has undergone different reforms, innovations and changes. The changes, innovations and reforms in the education sector are geared toward the provision of essential educational services that will meet national aspirations. Generally, educational innovations, changes and reforms are often considered an essential mechanism to address the inadequacies in the education sector for the provision of quality educational services. These reforms are considered essential for meeting the social and economic as well as human capital needs of the nation. These innovations and reforms are also essential to prevent the education sector from going into entropy, retardation of to prevent the sector from lagging behind when compared to what obtains in other parts of the world.

Reforms, changes and innovations in secondary education are of national concern and importance because secondary education is essential to the advancement of any nation. The importance of secondary education to any nation cannot be overemphasized because it serves as a transitional stage between primary and tertiary education. Secondary level of education is the focal point of our educational system and parents, government and other critical education sector take interest in what happens at this level of education. The secondary level of education is crucial because it heavily determines and influences both the input into and the quality of the output from our tertiary institutions due to its connecting position between the primary tertiary levels of education. Due to the significance of secondary education, numerous reforms, changes and innovations have been made at this level with the goal of strengthening the system of education at all levels. This will guarantee that the secondary education objectives are met.



The ability of the teacher to also use the available tools vis-à-vis digital skillfulness is also an important component of teachers' digital readiness. There are a wide range of academic and administrative activities that teachers must be able and competent to utilize with the available tools for virtual teaching to take place. This is premised on the fact that the teacher is expected to be able to do a lot with the tools at his or her disposal to meet series of needs across subject areas, administrative functions and other o-curricular activities. The better the teacher is able to use these devices for a range of activities that contributes to educational goal attainment, the easier it is for the school to go virtual and adopt this method for instructional activities. Digital skill readiness is not only restricted to the ability to use these tools but also a wide range of competencies that support the use of digital instructional methods. This means that the teacher should be able to bring to the fore other capabilities such as problem solving skills that will make it easy for him or her to maximize the digital platform for a wide range of educational services.

Digital readiness is the act of being digitally prepared and it refers to how easily an individual and an organization can switch over to digitized workflows using software and other technologies. Digital readiness goes beyond having software and hardware technologies to developing the skills and behavioural competencies to use these technologies for service delivery which in this case is related to virtual teaching. Scholars such as Huang (2022) as well as Champa, Rochsantiningsih and Kristiana (2019) opined that teachers' digital readiness is defined by their readiness in terms of tools, skills, behaviour, belief, experience and familiarization with required channels. Teachers no doubt are expected to be at the forefront of digital readiness in schools for virtual teaching to take place as they are central in guiding the students on how to use this process for educational service delivery.

### Statement of the Problem

Teaching is one important tool that should be available to all, this is because it opens up endless equal opportunities for all. This has resulted in changes in the ways teaching and learning has been delivered over the years. However, there seem to a decline in our learning outcomes going by reports from certain forms of evaluation from exams in the country. Showing lapses in certain areas by the students as a result of stereotype form of teaching. This exposure was brought about by the recent past global economic crisis that hit virtually all sectors of the economy. There were set backs in economic activities and the educational sector were not left out. Within the period of this crisis, knowledge dissemination was short lived in in some areas in the African continent because of some technical knowhow. One could wonder if the technological changes in the world did not have any bearing in Africa especially Nigeria. Could this be as a result of the belief system or behavioural disposition of the region? Are teachers and the educational sector deficient of what to do? Hence, the study examined teachers' perception of their readiness to use virtual tools for teaching in public senior secondary schools in Rivers State.

### Aim and Objectives of the Study

The aim of the study was to investigate teachers' attitude and readiness for virtual teaching in public senior secondary schools in Rivers State. In specific context, the objectives of the study were to:

1. determine the extent of teachers' digital behaviour readiness for virtual teaching in public senior secondary schools in Rivers State
2. find out the extent of teachers' digital belief readiness for virtual teaching in public senior secondary schools in Rivers State

### Research Questions

The following research questions were raised to guide the study:

1. To what extent is teachers' digital behaviour readiness for virtual teaching in public senior secondary schools in Rivers State?
2. What is the extent of teachers' digital belief readiness for virtual teaching in public senior secondary schools in Rivers State?

### Hypotheses

The following hypotheses were tested at 0.05 level of significance:

1. There is no significant difference between the mean ratings of male and female teachers on the extent of teachers' digital behaviour readiness for virtual teaching in public senior secondary schools in Rivers State
2. There is no significant difference between the mean ratings of male and female teachers on the extent of teachers' digital belief readiness for virtual teaching in public senior secondary schools in Rivers State.



## LITERATURE REVIEW

### Theory of Transactional Distance by Moore 1993

The impact of Moore's Theory of Transactional Distance on online learning is clear. It clarifies and measures the learning relationship between the teacher and the pupil in an online learning setting where there is a great deal of spatial or temporal separation between them. The psychological or communicative space that separates the instructor from the learner in the transaction between them, occurring in the structured or planned learning situation, is referred to as transactional distance, as opposed to physical or temporal distance. According to Moore's theory, three groups of variables regulate how much transactional distance there is which are dialogue, structure and learner autonomy.

In the theory, it was established that it is possible to increase communication between students and their teachers through the use of communications media, thereby reducing the transactional distance. Similarly, the amount of interaction between students and teachers is higher in highly structured programmes where there is little to no teacher-student interaction. On the other hand, teleconference programmes with lots of conversation and little predetermined structure have low transactional distance. The third element to take into account in this process is learner autonomy. In this case, learner autonomy is the degree to which, in the teaching and learning relationship, it is the learner rather than the teacher who determines the goals, the learning experiences, and the evaluation decisions of the learning programme that is being outlined. The learner must exercise more autonomy the longer the transactional distance. Therefore, the course can be designed in that direction if it is known in advance that the targeted learners have a preference for autonomy, for example, by being tightly structured with little opportunity for dialogue to increase transactional distance.

Moore introduced the influential concept of transactional distance, which describes the level of psychological separation between a student and a teacher. It implies that, despite the fact that separation in terms of space and time is the main feature of distance education, transactional distance is actually its guiding principle, affecting both the teaching and learning processes. Due to the fact that transactional distance is a relative rather than an absolute concept, it can also be felt in face-to-face instruction. Dialog, structure, and learner autonomy are the three variables that determine how much transactional distance the learner will perceive. Transactional distance will be higher or lower depending on how these variables appear, allowing for a typology of educational programs. For instance, a rise in structure is anticipated to decrease dialog and increase transactional distance. The idea of transactional distance has had a significant impact on distance learning.

This theory is of importance to this study as the implementation of virtual education sometimes creates physical distance that needed to be covered. Transactional distance is reduced when the teacher and students possess the needed tools that can be used to communicate with one another and engage in meaningful conversations that will lead to the actualization of educational goals and objectives. However, for this to happen, the school must be ready to do away with the old structure which created the gap and a new system must be instituted for sustainable educational goals attainment in the school.

### Teachers' Digital Behaviour Readiness for Virtual Teaching

One of the aspects that is critical to teacher's digital readiness is a virtual learning environment is their behaviour, disposition, aptitude and perception towards digital teaching and learning. This means that teachers are expected to be digitally ready not just in terms of tools, skills and knowledge but also in the aspect of their behaviour which is essential for managing the entire process. Al-Awidi and Aldhafeeri (2017) noted that technology has enormous potential to improve educational procedures and curricula. However, it's possible that teachers aren't prepared to incorporate technology and don't have the necessary knowledge, attitude and expertise to use technology to support the curriculum implementation process. The behaviour of the teacher in a virtual education setting is usually different from what obtains in a regular classroom environment because the climate in both learning structure is not the same and the teacher must bear this at the back of his or her mind to maximize this process. Scholars such as Ruggiero and Mong (2015) as well as Sabzian and Gilakjani (2013) have noted that teachers need to have a strong foundation in digital media knowledge and skills as well as new perspectives, methods, roles, professional development opportunities, and attitudes regarding technology integration in order to be prepared to integrate it into the curriculum. In fact, the behaviour of the teacher on this platform can make or mar the entire process as it can determine whether or not the students who are also important in the entire process will participate.



According to Mansor, Zabarani, Jamaludin, Mohd, Alias and Mansor (2021), remote education using a combination of technologies which offers quick fixes for the majority of school needs to ensure learning continuity when converting to such an educational system. However, one of the areas that have often been left unattended to is if the teachers who are at the center of this process are ready both mentally, socially and in other behavioural aspects apart from merely possessing the needed knowledge and tools. Teachers are frontliners in the virtual education implementation process and so it is important to consider their readiness during this crucial transition phase to this system of education. Teachers are humans with various levels of experiences on and off the digital space and they have various physical, social and mental challenges which affect how they perceive digital technology in the instructional process. All of these influence their behaviour and a teacher who is not behaviourally ready will not support the successful implementation of any virtual education system either as a result of past experiences, belief or any social orientation and this can affect the success of the process. Technology readiness, along with content readiness, instructional readiness, support readiness, and evaluation readiness are all behaviorally driven and this is a factor that has a role to play in the effectiveness of virtual education methods that has not previously received much attention from teachers as an issue that should be given proper attention especially in their attitude towards this system of education.

One of the key factors in the implementation of virtual education at all educational levels is attitude. Technology adoption intentions among teachers often depend on how they feel about using it in the classroom. The behaviour and attitude of teachers can determine when, how and why they will use such technologies in the instructional process. When examining teachers' intentions to teach online, several researchers found that attitude was the biggest influencing factor on pre-service teachers' intention to adopt technology and this may not be unconnected with the fact that some of these teachers are new to this system, and this may pose some challenges in the adoption of this system of education. It is therefore important for teachers to be made behaviorally ready for virtual education if its benefits must be realized when it is implemented in the school system.

Furthermore, there are several teachers that are inclined to the traditional method of teaching and learning and requiring them to switch to a virtual educational system will sometimes need a behavioural change. Many teachers are accustomed to teaching in-person in many different countries as stated by Moorhouse (2020) and Louis-Jean and Cenat (2020) also agreed to this assertion and this means that such teachers will require a mind shift not just to accept the new system of education but to also be willing to support it, adopt it and embrace it as a better way of educational service delivery. Normally, employees are often resistant to change, and this is because they might not have been competent or aware of how the new system will contribute to the realization of educational goals and objectives and how they could offer inclusive education to the students who they oversee both digitally and remotely when asked to switch to such virtual education system in an emergency and this are some of the behavioural changes that not just the teacher but the school need to put into consideration for this system to work.

### **Teachers' Digital Belief Readiness for Virtual Teaching**

Technologies are advancing quickly and offer a wide range of possibilities to those who wish to adopt them but there are several factors that often determine this adoption. In most of the developed economies augmented reality is even being used in educational settings for teaching and learning but in developing economies, this adoption is often determined by those who believe that these technologies can be helpful in the instructional process. Even though these advancements could indicate a difference in the quality of education, in practice teachers typically apply them in a straightforward manner in the classroom while some educational stakeholders are concerned that this prevents the teacher and students from reaching their full potential. According to Kopcha (2012), there is a noticeable discrepancy between the amount of technology that educators have access to and how they use it in the classroom for teaching and learning and this is often determined in some cases by their belief of whether or not these technologies will be useful and this is a critical determinant of whether or not the teacher will be digitally ready for virtual teaching.

The majority of teachers in most schools use new technologies mainly for administrative purposes in their line of work while very few consider it as important to teaching and learning especially in developing countries like Nigeria. Furthermore, ICT is not properly implemented when it is used in education, which prevents the technology from improving the quality of teaching and learning (Ertmer & Ottenbreit-Leftwich, 2013) and this is sadly what was experienced during the pandemic era in most Nigerian schools. Although technology is thought to be a transformative educational tool that has the power to alter the educational landscape, this change has not yet materialized due to the



belief that some teachers hold about them. This belief system has made some teachers to scarcely utilize these technologies while some others avoid them out rightly. There is no way these technologies will be used if the teachers do not believe that they are useful and this is important to virtual teaching in the school.

One personal trait that has been shown to be associated with teachers' instructional behavior is their beliefs about their own professional competencies which is an aspect of their readiness for the enforcement of any educational innovation. Regarding the relationship between teachers' competence-related beliefs and their use of digital technology in the classroom, there are conflicting opinions among scholars. It has been demonstrated that teachers' use of digital technology is positively explained by their self-reported technological knowledge and belief that this system will work. Some researchers also indicated that teachers' use of digital technology in the classroom can be explained by their perceptions of their own abilities to use it in pedagogical contexts. The use of digital technology by teachers and their perceptions of their own competency in using it in pedagogical settings, when the focus was on self-reported instructional quality dimensions is very germane. The belief of the teacher is instrumental to their readiness for any form of electronic teaching that will yield any result.

The quality of instruction using digital technology as reported by teachers correlates with their competence-related beliefs about their basic use of the technology. Inconsistencies in outcomes may be explained by the use of various instruments to gauge teachers' beliefs about their competence. One possible reason for the inconsistent results could be that the assessment of competence beliefs was done in a way that was too broad and unrelated to any particular teaching duties that the teacher is engaged in. Therefore, focusing on particular teaching-related competence dimensions that correspond with particular instructional behaviors could be one way to investigate the relationships between competence beliefs and instructional behaviors in the context of digital technologies in the classroom. When the teacher develops the right belief, existing technologies can be used by the teacher not just for virtual teaching alone but other educational activities that will contribute to the attainment of educational outcomes.

Teachers' behavior in the classroom is influenced by their beliefs about education. The attitudes that teachers have regarding education, teaching, learning, and students are referred to as their beliefs. To comprehend the decisions teachers, make in the classroom, it is important to recognize the beliefs they hold and the factors that motivate them to act on them. A factor influencing technology integration, according to research, is the personal beliefs of the teachers. According to a number of studies, one of the best indicators of use is teachers' perceptions of the advantages of technology for students' learning (McCulloch et al., 2018) and this influences the extent to which teachers will use available technologies for educational purposes.

The nature of teaching and learning in any virtual space is a topic covered by teachers' pedagogical beliefs (Tondeur et al., 2017). In literature, they are frequently categorized as either student- or teacher-centered. While student-centered beliefs are linked to constructivism, teacher-centered beliefs are typically associated with behaviorism and can be referred to as traditional pedagogical beliefs. Through student-centered activities, students can actively create knowledge instead of just passively absorbing it from their teachers. Teaching professionals' pedagogical beliefs are influenced by their views on the nature of knowledge. It is when the right belief is developed that the teacher can be said to be actually ready for virtual teaching and this is what exists in several schools in Nigeria and other developing economies and has made some schools more adaptive to virtual teaching than others because of the digital belief readiness of the teacher who is at the center of the instructional delivery process.

### Methodology

Descriptive survey design was adopted for the study. The population of the study was 6,573 teachers in the 289 public senior secondary schools in Rivers State out of which 377 teachers were sampled for the study using multi stage sampling technique. The instrument used for data gathering was questionnaire titled "Teachers Attitude And Readiness For Virtual Teaching Questionnaire (TARVTQ). The questionnaire was face and content validated by the researcher's supervisors and three other experts (one in the Department of Educational Management and two in Measurement and Evaluation under the Department of Educational Psychology, Guidance and Counseling) from University of Port Harcourt. The reliability of the questionnaire was determined using Cronbach Alpha statistics and the reliability index of the seven clusters of the questionnaire were 0.91 and 0.90, while the average reliability was 0.87. There were 377 copies of questionnaire administered, while 369 copies were retrieved which indicated a 97.9%



retrieval rate. The research questions raised were answered using mean and standard deviation while the hypotheses were tested using z-test at 0.05 level of significance.

### RESULTS

**Research Question One:** To what extent is teachers’ digital behaviour readiness for virtual teaching in public senior secondary schools in Rivers State?

**Table 1: Mean and Standard Deviation Scores on the Extent of Teachers’ Digital Behaviour Readiness for Virtual Teaching in Public Senior Secondary Schools in Rivers State**

S/No	Statements	Male Teachers n=177			Female Teachers n=192			$\bar{X}_1$ $X_2$
		Mean $\bar{X}_1$	SD	Decision	Mean $\bar{X}_2$	SD	Decision	
11	Teachers transmit their educational activities online rather than offline when they are opportune to do so	2.95	0.77	High Extent	2.93	0.80	High Extent	2.94
12	Teachers are actively involved in sourcing educational information online	2.63	0.85	High Extent	2.75	0.82	High Extent	2.69
13	Information shared by teachers online are properly secured	2.71	0.86	High Extent	2.59	0.88	High Extent	2.65
14	Teachers adopt electronic tools to measure educational activities to determine their technological relevance	2.52	0.89	High Extent	2.52	0.90	High Extent	2.52
15	Teachers are open to digital change for digital transformation which is essential for virtual education	2.82	0.83	High Extent	2.74	0.83	High Extent	2.78
<b>Grand Mean and Standard Deviation</b>		<b>2.73</b>	<b>0.84</b>	<b>High Extent</b>	<b>2.71</b>	<b>0.85</b>	<b>High Extent</b>	<b>2.72</b>

Table 1 revealed that the male teachers sampled for the study responded to items 11, 12, 13, 14 and 15 with mean values of 2.95, 2.63, 2.71, 2.52 and 2.82 while the female teachers responded to the same set of items with mean scores of 2.93, 2.75, 2.59, 2.52 and 2.74. Following the decision making rule, items above the criterion mean score of 2.50 implied that the items existed to a high extent and since all the items responded to by the teachers were above the criterion mean score, it implied that all the items existed to a high extent. However, item 11 had the highest mean score of 2.95 from the male teachers and the same item had the highest mean score of 2.93 from the female teachers and this implied that the teachers indicated that the major part of their digital behaviour readiness was that they prefer to transmit their educational activities online than offline. In summary, the grand mean scores of 2.83 and 2.74 from the male and female teachers implied that they both agreed that there was a high extent of teachers’ digital behaviour readiness for virtual teaching in public senior secondary schools in Rivers State. The item with the highest mean set score of 2.94 indicated that there was a high extent to which teachers cultivated the behaviour of transmitting educational knowledge online while the lowest mean set score of 2.52 indicated that the teachers scarcely used electronic tools to measure educational activities. The average mean set score of 2.72 indicated that there was a high extent of teachers’ digital behaviour readiness for virtual teaching in public senior secondary schools in Rivers State

**Research Question Two:** What is the extent of teachers’ digital belief readiness for virtual teaching in public senior secondary schools in Rivers State?



**Table 2: Mean and Standard Deviation Scores on the Extent of Teachers’ Digital Belief Readiness for Virtual Teaching in Public Senior Secondary Schools in Rivers State**

S/No	Statements	Male Teachers n=177			Female Teachers n=192			X <sub>1</sub>	X <sub>2</sub>
		Mean $\bar{X}_1$	SD	Decision	Mean $\bar{X}_2$	SD	Decision		
21	There is a general orientation that technology can facilitate virtual teaching	2.73	0.85	High Extent	2.84	0.84	High Extent	2.79	
22	Virtual teaching can assist in the attainment of educational goals and objectives	2.68	0.83	High Extent	2.63	0.87	High Extent	2.66	
23	Teachers understand that adopting emerging technologies can results to an innovative system of instructional delivery	2.82	0.83	High Extent	2.67	0.85	High Extent	2.75	
24	Enforcing technology based virtual teaching is a waste of resources	2.35	0.93	Low Extent	2.29	0.93	Low Extent	2.32	
25	Teachers have the innate intent to try out virtual teaching as an alternative teaching method	2.62	0.86	High Extent	2.88	0.82	High Extent	2.75	
<b>Grand Mean and Standard Deviation</b>		<b>2.64</b>	<b>0.86</b>	<b>High Extent</b>	<b>2.66</b>	<b>0.86</b>	<b>High Extent</b>	<b>2.65</b>	

Table 2 indicated that the responses of the male teachers to items 21, 22, 23, 24 and 25 produced mean values of 2.73, 2.68, 2.82, 2.35 and 2.62 while the female teachers responded to the same set of items with mean responses of 2.84, 2.63, 2.67, 2.29 and 2.88. The responses from the teachers indicated that items 21, 22, 23 and 25 all had mean values that were above the criterion mean score of 2.50 used for decision making both from the male and female teachers and as such the various items existed to a high extent while only item 24 had mean score below the criterion mean score of 2.50 used for decision making both from the male and female teachers and this implied that this item existed to a low extent. The male teachers mainly believed that there is a general orientation that technology can facilitate virtual teaching while the female teachers mainly believed that they had the intent to use technology as an alternative teaching method. The grand mean score of 2.64 from the male teachers and 2.66 from the female teachers both suggested that the respondents believed that there is a high extent of teachers’ digital belief readiness for virtual teaching in public senior secondary schools in Rivers State. The highest mean set score of 2.79 indicated that majority of the teacher believed that technology can facilitate virtual teaching while the least mean set score was 2.32 which indicated that the teachers believed to a low extent that technology based teaching is a waste. The average mean set score of 2.65 indicated that there was a high extent of teachers’ digital belief readiness for virtual teaching in public senior secondary schools in Rivers State.

**Hypothesis 1:** There is no significant difference between the mean ratings of male and female teachers on the extent of teachers’ digital behaviour readiness for virtual teaching in public senior secondary schools in Rivers State.



**Table 3: Summary of z-test Analysis on the Difference in the Mean Score of Male and Female Teachers on the Extent of Teachers’ Digital Behaviour Readiness for Virtual Teaching in Public Senior Secondary Schools in Rivers State**

Variable	n	Mean	SD	df	z-cal.	z-crit.	Level of Significance	Decision
Male Teachers	177	2.73	0.84	367	0.23	1.96	0.05	Not Rejected
Female Teachers	192	2.71	0.85					

Table 3 revealed that at 0.05 level of significance and 367 degrees of freedom, the value of z-crit. was 1.96 and this value was more than the estimated value of z-cal. of 0.65 and as such, the null hypothesis was not rejected showing that there was no significant difference between the mean ratings of male and female teachers on the extent of teachers’ digital behaviour readiness for virtual teaching in public senior secondary schools in Rivers State.

**Hypothesis Two:** There is no significant difference between the mean ratings of male and female teachers on the extent of teachers’ digital belief readiness for virtual teaching in public senior secondary schools in Rivers State

**Table 4: Summary of z-test Analysis on the Difference in the Mean Score of Male and Female Teachers on the Extent of Teachers’ Digital Belief Readiness for Virtual Teaching in Public Senior Secondary Schools in Rivers State**

Variable	n	Mean	SD	df	z-cal.	z-crit.	Level of Significance	Decision
Male Teachers	177	2.64	0.86	367	0.22	1.96	0.05	Not Rejected
Female Teachers	192	2.66	0.86					

Table 4 revealed that at 0.05 level of significance and 367 degrees of freedom, the value of z-crit. was 1.96 and this value was more than the estimated value of z-cal. of 0.22 and as such, the null hypothesis was not rejected implying that there was no significant difference between the mean ratings of male and female teachers on the extent of teachers’ digital belief readiness for virtual teaching in public senior secondary schools in Rivers State.

## DISCUSSION

### Teachers’ Digital Behaviour Readiness for Virtual Teaching

The average mean set score of 2.72 indicated that there was a high extent of teachers’ digital behaviour readiness for virtual teaching in public senior secondary schools in Rivers State. The findings of the study indicated that for the male and female teachers sampled for the study, there was a high extent of teachers’ digital behaviour readiness for virtual teaching in public senior secondary schools in Rivers State. Similarly, there was no significant difference between the mean ratings of male and female teachers on the extent of teachers’ digital behaviour readiness for virtual teaching in public senior secondary schools in Rivers State. However, the study by Willermark and Gellerstedt (2022) indicated that there are still variations in teachers digital behaviour as a result of difference in experience. This finding of this study differs from the finding of the study by Kibet (2017) which indicated that gender and experience are significant to teachers’ digital literacy which contradicts the finding of this study as there was no significant difference in the digital behaviour of the teachers based on their gender. The teachers from their responses indicated that they are willing and open to transmit their educational activities online than offline. This align with the outcome of the study by Tunmibi, Aregbesola, Adejobi and Ibrahim (2015) which study that teachers agree that virtual teaching is straightforward and comes with a lot of benefit but they must be prepared to harness all of the benefits it affords. This means that the teachers have the aspiration and are open to disseminating their educational activities using existing digital medium rather than the existing traditional methods and their willingness to do this indicates that they have the right attitude to use digital and are ready to do this when they have the opportunity to so. Zabarani, Mansor, Jamaludin, Ismail, Deli and Zakaria (2022) pointed out in the finding of their study that teachers prepare adequately in terms of their behaviour as part of the dimensions of their digital readiness. This makes it easy for educational programmes to be successfully implemented by the teachers.





The teachers in their responses also indicated that there is a high extent to which they engage in sourcing for educational information online. Soomro, Hanafiah and Nor (2020) found that success in digital activities is determined by several factors which includes knowledge gathered by teachers from varying information sources. This could be in the form of sourcing for information online when preparing lessons for instructional delivery. When teachers have cultivated the attitude of sourcing for educational information online, it becomes an attitude and a behaviour over a period of time. In a similar manner, the teachers indicated that they have the desire to carry out their educational activities online rather than offline. This means that with the right encouragement, these teachers can cultivate the habit of carrying out all their educational activities online than offline and this is essential for sustainable virtual teaching. Regular use of online methods of executing educational activities becomes a practice over time which makes the process more sustainable.

The responses of the teachers also showed that they both know how to secure the information they share online and this means that these teachers must have acquired deeper knowledge of how this process can be used securely for carrying out their educational activities. Palero, and Mutya. (2022) pointed out that the knowledge and attitude of teachers improve digitally basically because of the training they participate in which gives them access to required information needed for participation in online activities. The ability to secure online information is built from continuous usage and this means that these teachers must have familiarized themselves with the use of online/digital methods of educational service delivery and this could be directly or indirectly in the process of discharging their educational services. This becomes a regular practice over time which makes the job of the teacher easy and efficient in the practice of virtual teaching. The teachers also indicated that they understand how to evaluate the various activities they carry out online to determine if educational goals and objectives are being achieved. They equally pointed out that they are open to any digital educational change that will improve service delivery which is required for successful virtual teaching. Generally, the male and female teachers showed a high extent of digital behaviour readiness which is essential for virtual teaching particularly at this level of education.

#### **Teachers' Digital Belief Readiness for Virtual Teaching**

The average mean set score of 2.65 indicated that there was a high extent of teachers' digital belief readiness for virtual teaching in public senior secondary schools in Rivers State. The result of the study established that for the male and female teachers sampled for the study, there was a high extent of teachers' digital belief readiness for virtual teaching in public senior secondary schools in Rivers State. This finding aligns with the outcome of the study by Abaa, Aina, Akande and Ogunjirin (2022) which indicated that teachers have positive disposition towards digital teaching and learning. It was also shown that there was no significant difference between the mean ratings of male and female teachers on the extent of teachers' digital belief readiness for virtual teaching in public senior secondary schools in Rivers State. This result differs from that of Cuhadar (2018) which showed that there is a difference in the way teachers adopt available technology by gender. This may however differ from what obtains from the findings from the study by Lucero, Victoriano, Carpio and Fernando (2021) which only showed that this difference existed only by type of institution. In fact, Paladan (2023) in his study went further to point out that private school teachers have better digital believes than those in the public schools and this is why public schools need to put in more effort for the narrative to change toward successful virtual teaching. The male and female teachers in their responses indicated that they believe that technology adoption can facilitate virtual teaching and this means that the teachers have the belief that with access to more technology, it will be easy for them to engage in the practice of virtual teaching. In fact, no virtual teaching can take place without embracing available technologies.

Teachers in the study also indicated from their responses that there is a high extent to which virtual teaching can contribute to the attainment of educational goals and objectives. In fact, Bubou and Job (2022) found in their study that when teachers are innovative, it becomes easy for them to do a lot of things on available digital platforms. This means that with virtual teaching system in place, teachers' belief that they can effortlessly discharge services that will lead to the attainment of educational goals and objectives. The male and female teachers also indicated from their responses that they believe that with virtual teaching mechanism in place, it is possible for the teachers to develop innovative methods of teaching that will meet teachers need and promote efficient service delivery. These responses basically show that there are a lot of other innovative educational services that teachers may be able to carry out if virtual teaching system is in place as the teachers already have a strong believe about this aspect of their digital readiness for virtual teaching.



The teachers in their responses do not believe that virtual teaching is waste of resources as they indicated that that they believe to a low extent that virtual teaching is a waste of resources. This result differ from what obtains from the study by Hosny, Ghaly, AlSheikh, Shehata, Salem and Atwa (2021) which indicated that the belief of teachers is ranked low when compared to their digital skills. This response means that the teachers will be willing to invest in any activity that will result to the enforcement of virtual teaching in the school as they believe that this kind of investment will be worth it. Corroborating this finding, the teachers indicated a high extent of belief that virtual teaching is an alternative teaching system that they are willing to try out. It therefore means that there is a high extent of digital belief among the male and female teachers and with the right support in place, they are willing to try this out for virtual teaching to be sustained in the schools where they teach. Basically, Rashid, Shukor, Tasir and Na (2021) pointed out that there is a moderate level of teachers' belief on how much digital technologies can be useful and this calls for further action among teachers, school administrators and the government for virtual teaching to success in these schools.

### Summary of Findings

The following summaries of findings were highlighted based on the analysis of data collected and presented in the study:

1. Both the male and female teachers with grand mean scores of 2.83 and 2.74 agreed that there was a high extent of teachers' digital behaviour readiness for virtual teaching in public senior secondary schools in Rivers State. The average mean set score of 2.72 indicated that there was a high extent of teachers' digital behaviour readiness for virtual teaching in public senior secondary schools in Rivers State.
2. The grand mean score of 2.64 from the male teachers and 2.66 from the female teachers both suggested that the respondents believed that there is a high extent of teachers' digital belief readiness for virtual teaching in public senior secondary schools in Rivers State. The average mean set score of 2.65 indicated that there was a high extent of teachers' digital belief readiness for virtual teaching in public senior secondary schools in Rivers State.

### CONCLUSION

Based on the findings of the study, it was concluded that teachers attitude and readiness for virtual teaching in public senior secondary schools in Rivers State as there are several other aspects in which they are still lagging for successful virtual teaching in these schools and there are different forms of challenges that male and female teachers identified are barriers to their practice and readiness for virtual teaching in public senior secondary schools in Rivers State.

### Recommendations

The following recommendations were drawn from the findings of the study:

1. Adoption of digital methods of instructional delivery must be emphasized by school administrators to enable teachers cultivate the right digital behaviour that will make virtual teaching possible. School administrators must mandate their teachers to cultivate the habit of utilizing digital methods of instructional delivery. This will be possible through the enforcement of this practice through the collaboration between the government and school administrators.
2. Teaching activities should be encouraged by school administrators on multiple digital channels so that teachers can be familiarized and also have alternative digital channels that they can use for their teaching activities. Teachers need to be exposed to as well as allowed to build competence in the use of different digital channels for instructional delivery. Similarly, schools can also decide to develop their own digital channel or platform that will meet the peculiarity of the school curriculum and allow teachers to engage in virtual teaching on a platform that they are conversant with.

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