

## **ASSESSING THE SELF-EFFICACY AND BEHAVIOURAL INTENTION OF PRE-SERVICE TEACHERS TOWARDS ELECTRONIC TEACHING IN NIGER STATE, NIGERIA**

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### Abstract

This study was carried out to assess the self-efficacy and behavioural intention of pre-service teachers towards electronic teaching in Niger State, Nigeria. Descriptive survey research design was employed and 441 pre-service teachers in tertiary institutions in Niger State constituted the research sample. Four research questions and two null hypotheses guided the study and a 20-item questionnaire was used as an instrument for data collection. The questionnaire was validated by educational technology experts. Pilot test was carried out and reliability coefficients of 0.84 and 0.87 were obtained for the two constructs sections of the questionnaire. Data collected from the administration of the research instrument were analysed using descriptive and inferential statistics of Mean, Standard Deviation and t-test. However, because there was no significant difference recorded between male and female pre-service teachers' self-efficacy and behavioural intention, the two null hypotheses were not rejected. A decision rule was set, in which a mean score of 3.0 and above was considered Agreed, while a mean score below 3.0 was considered Disagreed. Findings revealed that pre-service teachers have high level of self-efficacy in using electronic resources for teaching with grand mean score of 3.57. Also, pre-service teachers' response based on their intention towards electronic teaching was positive with a grand mean score of 4.35. Based on these findings, it was recommended that resources that will aid the delivery of teaching in electronic mode should be put in place for teachers in primary and secondary schools in order to improve the quality of teaching.

**Keywords:** Electronic resources, self-efficacy, behavioural intention, pre-service teachers

## **Introduction**

The influence of digital technology in the society has made electronic teaching a basic requirement needed in the 21st Century education sector. Electronic teaching entails the use of Information and Communication Technology (ICT) in education to accelerate the achievement of national educational goals by connecting learners and teachers together for professional support services through electronic teaching. Teaching is becoming one of the most challenging professions in the society today where knowledge is expanding so rapidly that modern technologies demand the use of Information and Communication Technology (ICT). ICT is defined as a diverse set of technological tools and resources used to communicate, to create, disseminate, store and manage information. ICT has become within a short time one of the basic building blocks of a modern society. Many countries now regard understanding ICT and mastering its basic concepts as part of the core of education (UNESCO, 2002).

ICT has become an integral part of the human society and this development has challenged the traditional role of teaching in the educational sector. Now, education is tailored towards equipping the learner with technology and information literacy, problem solving skills, critical reasoning, and the ability to use digital technology in accessing and utilising information for problem-solving. These knowledge components often described as ICT-literacy has become part of the basic labour requirement in knowledge driven societies; and a necessary

foundation for higher education and professional development (Garba & Alademerin, 2014). ICT in education implies the use of technology which consists of electronic devices and associated human interactive materials that enables the user to employ them for a wide range of teaching-learning process. It is also a mode of education that uses information and communication technology to support, enhance, and optimise the delivery of information (Luszczynska & Schwarzer, 2005). The National Policy on Education places emphasis on the provision and utilization of Information and Communication Technology (ICT) in Nigerian schools when it states that in recognition of the prominent roles of information and communication technology in advancing knowledge and skills necessary for effective functioning in the modern world, there is urgent need to integrate ICT into education in Nigeria (FRN, 2013).

Electronic teaching involves computational systems that communicate and cooperate with learners at many levels. It is also a teaching style that involves the use of computers and multimedia devices to support the process of teaching and learning in a classroom (Bennet & Coleman, 2018). Every nation strives towards the provision of quality education for its citizens, because of the realization that education is necessary to engineer and consolidate any nation's developmental process. However, achieving quality education would be a mirage if teachers training programmes are not in good shape. Teachers training programme refers to a program that is related to the development of teacher's

proficiency and competence that would enable and empower the teachers to meet the requirements of the profession and face the challenges therein (Oancea, 2014).

There is no doubt that teacher education is a veritable tool towards educational development. This fact was given credence to by the National Policy on Education (FRN, 2004) when it stated that teacher education will continue to be given a major emphasis in all educational planning, because no education system can rise above the quality of its teachers (Akindutire & Ekundayo, 2012). Teacher training programme refers to the policies, procedures, and provision designed to equip prospective teachers with the knowledge, attitudes, behaviours, and skills they require to perform their tasks effectively in the classroom, school, and wider community. The professionals who engage in this activity are called teacher educators. Those who enrol for teacher training programmes are often referred to as pre-service teachers (Allen, 2011).

Pre-service teachers are individuals who are in a teacher-education programme in order to pursue teaching credentials in public schools or private sectors domestically or internationally (Judith-Ann, *et al* 2014). Pre-service teachers need the capacity to integrate Information and Communication Technologies (ICTs) in ways which harness their learning affordances and develop students' digital literacies. This capacity is given to them during the course of their teacher training programme as they are tutored by teacher educators on how to effectively manage ICT in their teaching profession. However, effective ICT

integration in the classroom depends on the pre-service teacher's self-efficacy and behavioural intention towards the use of ICT facilities during and after his/her teacher training programme (Gill, *et al* 2015).

Self-efficacy is the belief a person has in his/her own abilities, specifically one's ability to meet the challenges of life ahead and complete every task successfully (Akhtar, 2008). Self-efficacy is an individual agency or judgement of one's capabilities to organise and execute courses of action required to attain designated types of performance (Issa *et al*, 2018). Self-efficacy is not about what an individual has but belief in what an individual can do with whatever resources at their disposal. Self-efficacy can also be a personal judgement of how well one can execute courses of action required to deal with prospective situations (Bandura, *et al* 2003). A pre-service teacher's self-efficacy in the aspect of electronic teaching refers to overall belief of an individual in his/her ability to succeed while using various ICTs facilities to impart knowledge on students through electronic teaching. Pre-service teachers who have high self-efficacy will exert sufficient effort that, when well executed, will lead to successful outcomes, whereas those with low self-efficacy are likely to cease effort early and fail (Kolbe, 2009).

Behavioural intention according to committee on communication for behaviour change (2002) is an individual perceived likelihood or subjective probability that he/she will engage in a given behaviour. Behavioural intention is the likeness of a person or an individual having a recurrent plan

or decision to use a delivery method that directly affect the overall delivery type. Individuals' intention toward technology determine the actual usage (Falode, 2018). Behavioural intention in this context is a degree to which an individual has formulated conscious plan to perform or not to perform in using electronic method of teaching.

In the society today, there are many dimensions in which people are differentiated. One of these dimensions is gender. As noted by the United Nations, gender refers to the social attributes and opportunities associated with being male and female and the relationships between women and men and boys and girls. In some societies there are more women than men while in some other societies, reverse is the case. There are various jobs/activities that are attributed to a specific gender, and when the opposite gender indulges in such activities, it is termed a taboo and people from that gender are often discriminated (United Nations, 2008).

In this era of Information and Communication Technology (ICT), teaching techniques are shifting from being teacher centred to learner-centred. Most developed countries have exploited the potentials of educational technology tools such as computers, projectors, smart boards, Digital Versatile Disk (DVD) players, interactive software among others to transform their teaching-learning process. These education technology tools make teachers better efficient, learning better achieved and teaching-learning effective.

Unfortunately, schools in Nigeria are yet to extensively adopt these educational tools for teaching

-learning process. Majority of Nigerian teachers are still using the traditional talk and chalkboard method of teaching. This traditional method of teaching keeps student passive in the class against the learner-centred learning approach thereby affecting their academic output and obviously does not prepare students for the information age and globalization. To enable students to derive maximum benefits associated with technology in curriculum delivery and align Nigeria properly with the rest of the technological world, Nigerian government and other stakeholders in education must adopt the full implementation of electronic teaching in Nigerian schools by incorporating new skills and technologies that will encourage electronic teaching into pre-service teachers' preparation programmes.

However, studies have revealed that lack of attention to integration of ICTs in pre-service teachers' preparation programmes limits its use during classroom activities. Now the question is if significant attention should be paid to integration of ICTs in pre-service teachers' preparation programmes in order to extensively adopt electronic teaching in Nigerian Schools, what is the level of self-efficacy of pre-service teachers towards electronic teaching? If they have high level of efficacy, what is their behavioural intention towards electronic teaching? It is on this note that the researcher intends to investigate the self-efficacy and behavioural intention level of pre-service teachers towards electronic teaching in Niger State, Nigeria.

## **Research Questions**

The following research questions guided the study:

1. Do pre-service teachers have self-efficacy in using electronic resources meant for electronic teaching?
2. What is the behavioural intention of pre-service teachers towards electronic teaching?
3. What is the influence of gender on the self-efficacy of pre-service teachers in Niger State in using electronic resources?
4. What is the influence of gender on pre-service teachers' behavioural intention towards electronic teaching in Niger State, Nigeria?

## **Research Hypotheses**

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

Ho<sub>1</sub>: There is no significant difference between male and female pre-service teachers' self-efficacy on electronic teaching in Niger State, Nigeria.

Ho<sub>2</sub>: There is no significant difference between male and female pre-service teachers' behavioural intention towards electronic teaching in Niger State, Nigeria.

## **Methodology**

The research design that was adopted for this study is a descriptive survey design. The methodology involves the use of questionnaire to obtain the needed data from respondents. The population of this study comprises all 62,531 pre-service teachers from institutions of higher learning that offer educational courses in Niger state. Four

thousand, four hundred and twenty-eight (4,428) final year pre-service teachers in Schools of Education of all the selected institutions constituted the target population because they have successfully completed teaching practice exercise. The sample for this study comprises of 441 final year pre-service teachers from school of education in the selected four higher institutions of higher learning in Niger State.

A multi-stage sampling technique was employed in selecting respondents for this study. Firstly, purposive sampling procedure was used to select four tertiary institutions of learning in Niger State which are all owned by the state and the Federal Government because education courses are offered in these institutions. Sample selected cut across both male and female pre-service teachers in the selected tertiary institutions of learning. Thereafter, convenience sampling was used to select final year pre-service teachers from faculty of education. Reasons being that it is difficult to sample students from all academic disciplines.

The research instrument that was used in this study to collect needed data is researcher-designed questionnaire named 'Questionnaire on Self-efficacy and Behavioural Intention of Pre-service Teachers for Electronic Teaching' (QSBET). The questionnaire was a close-ended questionnaire and it consist of 20 items and three sections A, B, & C. Section A was used to collect demographic data of the respondents. Section B, consist 10 items to collect data on the respondents' self-efficacy in using electronic teaching devices. Section C consists of 10 items to collect data on respondent's behavioural intention towards



electronic teaching. Sections B and C was presented using a 5-point Likert scale in which Strongly Agree (SA) was awarded 5 points, Agree (A) was awarded 4 points, Undecided (U) was awarded 3 points, Disagree (D) was awarded 2 points and Strongly Disagree (SD) was awarded 1 point. A decision rule was set, in which a mean score of 3.0 and above was regarded as agreement while mean score below 3.0 was regarded as disagreement.

The questionnaire was validated by three educational technology experts in the Department of Educational Technology and one ICT expert from Computer Science Department, all from Federal University of Technology, Minna. The reliability of the research instrument was determined after pilot test on 20 pre-service teachers from School of Technical Education, Niger State College of Education, Minna, which is part of the population, but not part of the sample for this study since they share related characteristics. The scores that were obtained were computed using Cronbach Alpha formula and coefficient index of 0.84 and 0.87 were obtained from the

variables: Self-efficacy and behavioural intention respectively. Based on the coefficient obtained, the instrument was considered reliable. The data collected from the sampled final year pre-service teachers were analysed using descriptive and inferential statistics. The research questions were answered using descriptive statistics of mean and standard deviation. The mean response below 3.0 was adjudged as disagreement, while mean response of 3.0 and above was adjudged as agreement. The t-test statistics was used to test the null hypotheses; the significant level was ascertained at alpha level of 0.05. The Statistical Package for Social Science (SPSS Version 23) was used for the analysis.

### **Results**

In this section, Tables 1-6 are presented with their interpretations tailored towards providing answers to the research questions raised to guide this study and the testing of hypotheses.

**Research Question One:** Do pre-service teachers have self-efficacy in using electronic resources meant for electronic teaching?

**Table 1: Mean and standard deviation of pre-service teachers’ response on their self- efficacy in using electronic resources**

S/N	Item	N	$\bar{x}$	Std. Dev	Decision
1	I can operate a computer and install software.	441	3.57	1.319	Agree
2	I can use computer and other ICT tools for teaching.	441	3.48	1.290	Agree
3	I can install teaching software on my PC.	441	3.49	1.288	Agree
4	I can upload my work to online platforms.	441	3.52	1.306	Agree
5	I can prepare power point presentations.	441	3.53	1.300	Agree
6	I can generate my lesson content from the web.	441	3.45	1.368	Agree
7	I can connect projector to computer to make my presentation.	441	3.78	1.252	Agree
8	I can teach my students how to prepare power point and encourage them to use it in their presentations	441	3.71	1.211	Agree
9	I can use E-teaching platforms to cover my scheme of work	441	3.54	1.252	Agree
10	I feel comfortable using E-teaching as a tool for teaching and learning.	441	3.66	1.197	Agree
<b>Average Mean</b>			<b>3.57</b>		

Decision mean = 3.0

Table 1 shows the mean and standard deviation of pre-service teachers' response on their self-efficacy in using electronic resources. The table shows the calculated mean score of 3.57 with Standard Deviation of 1.319 for item one, mean of 3.48 with Standard Deviation of 1.290 for item two, mean of 3.49 with Standard Deviation of 1.288 for item three, mean of 3.52 with Standard Deviation of 1.306 for item four, mean of 3.53 with Standard Deviation of 1.300 for item five, mean of 3.45 with Standard Deviation of 1.368 for item six, mean of 3.78 with Standard Deviation of 1.252 for item seven, mean of 3.71 with Standard

Deviation of 1.211 for item eight, mean of 3.54 with Standard Deviation of 1.252 for item nine and mean of 3.66 with Standard Deviation of 1.197 for item ten. The table reveals further that, the average mean score of responses to the 10 items is 3.57 which were greater than the decision mean score of 3.0. This implies that the pre-service teachers have high level of self-efficacy in using electronics resources for teaching.

**Research Question Two:** What is the behavioural intention of pre-service teachers towards electronic teaching?

S/N	Item	N	$\bar{x}$	Std. Dev	Decision
1	I intend to adopt electronic teaching in my teaching career.	441	4.24	0.967	Agree
2	I will adopt electronic teaching in order to interact with intellectuals and scholars worldwide.	441	4.07	0.891	Agree
3	I intend to adopt electronic teaching because it is less strenuous and more effective.	441	4.14	0.795	Agree
4	I intend to adopt electronic teaching because it requires participation of the teacher and the learners.	441	4.18	0.844	Agree
5	I intend to use electronic teaching to encourage full attentiveness of the students.	441	4.31	0.733	Agree
6	I plan to use electronic teaching forum to enrich my knowledge.	441	4.46	0.886	Agree
7	I intend to adopt electronic teaching because it makes communication with students and other teachers to be easy.	441	4.19	0.919	Agree
8	I intend adopting electronic teaching because it helps in accessing information and educational materials used in teaching.	441	4.24	0.827	Agree
9	I plan to adopt electronic teaching because it brings about easy monitoring of learners progress.	441	4.29	0.731	Agree
10	I plan to adopt electronic teaching because it makes lesson preparation and presentation easy.	441	4.25	0.823	Agree
<b>Average Mean</b>			<b>4.35</b>		

Decision mean = 3.0

Table 2 shows the mean and standard deviation of pre-service teachers' response on their behavioural intention toward the usage of electronic resources for teaching. The table shows the calculated mean score of 4.28 with Standard Deviation of 0.967 for item one, mean of 4.07 with Standard Deviation of 0.891 for item two, mean of 4.14 with Standard Deviation of 0.795 for item three, mean of 4.18 with Standard Deviation of 0.844 for item four, mean of 4.31 with Standard Deviation of 0.733 for item five, mean of 4.46 with Standard Deviation of 0.886 for item six, mean of 4.19 with Standard Deviation of 0.919 for item seven, mean of 4.24 with Standard

Deviation of 0.827 for item eight, mean of 4.29 with Standard Deviation of 0.731 for item nine and mean of 4.25 with Standard Deviation of 0.823 for item ten. The table reveals further that, the grand mean score of responses to the 10 items is 4.24 which were greater than the decision mean score of 3.0. This implies that the pre-service teachers have good behavioural intention towards electronics resources for teaching.

**Research Question Three:** What is the influence of gender on the self-efficacy of pre-service teachers in Niger State in using electronic resources?

**Table 3: Mean and standard deviation response based on gender influence on the self-efficacy of pre-service teachers in using electronic resources**

Gender	N	$\bar{x}$	Std. Deviation
Male	148	35.27	9.898
Female	293	35.96	9.251
<b>Total</b>	<b>441</b>		

Table 3 shows the mean and standard deviation respondents on gender influence on the level of self-efficacy of pre-service teachers in using electronic resources. The result indicated that the mean and standard deviation of the two groups differ with a mean score of 35.27 with standard deviation of 9.898 for male pre-service teachers and mean score of 35.96 with standard deviation of 9.251 for female pre-service teachers. Hence, the mean response of female pre-service teachers

is higher than that of male pre-service teachers. A corresponding hypothesis was tested and the analysis is presented in Table 5 to determine if significant difference exists between the mean scores of male and female pre-service teachers.

**Research Question Four:** What is the influence of gender on pre-service teachers' behavioural intention towards electronic teaching in Niger State, Nigeria?



**Table 4: Mean and standard deviation response based on gender influence on the behavioural intention of pre-service teachers towards utilization of electronic resources**

Gender	N	$\bar{x}$	Std. Deviation
Male	148	42.86	4.029
Female	293	42.11	6.426
<b>Total</b>	<b>441</b>		

Table 4 shows the mean and standard deviation respondents on gender influence on the behavioural intention of pre-service teachers towards utilisation of electronic resources. The result indicated that the mean and standard deviation of the two groups differ with a mean score of 42.86 with standard deviation of 4.029 for male pre-service teachers and mean score of 42.11 with standard deviation of 6.426 for female pre-service teachers. Hence, the mean response of female pre-service teachers is higher than that of male pre-service teachers. A corresponding hypothesis was tested and the analysis is presented in Table 6 to

determine if significant difference exists between the mean scores of male and female pre-service teachers.

**Hypothesis 1:** There is no significant difference between male and female pre-service teachers' self- efficacy on electronic teaching in Niger State, Nigeria.

To test this hypothesis, sample t-test independent is applied on the male and female pre-service teacher's response score regarding their self-efficacy in using electronic resources for teaching as presented in Table 5.

**Table 5: t-test result of male and female pre-service teachers' response based on the self-efficacy in using electronic resources**

Gender	N	Df	$\bar{x}$	S.D	t-value	p-value
Male	148	439	35.27	9.898	0.721 <sup>ns</sup>	0.471
Female	293		35.96	9.251		

NS: Not Significant at 0.05 level

Table 5 presents the result of t-test result of male and female pre-service teachers response based on their self-efficacy in using electronic resources. The mean score of the male and female are 35.27 and 35.96 respectively. The t-value of 0.721 was not significant at 0.05 alpha level, and the p-value of 0.688 is greater than 0.05. Therefore,

hypothesis one was accepted. This indicates that there is no significant difference between male and female pre-service teachers' self- efficacy on electronic teaching in Niger State, Nigeria. This implies that both male and female pre-service teachers have the same level of efficacy in using electronic resources for teaching.

**Hypothesis 2:** There is no significant difference between male and female pre-service teachers' behavioural intention towards electronic teaching in Niger State, Nigeria.

To test this hypothesis, sample t-test independent is applied on the male and female pre-service teachers' response score regarding their behavioural intention in using electronic resources for teaching as presented in Table 6.

**Table 6: t-test result of male and female response based on the behavioural intention of pre-service teachers in using electronic resources**

Gender	N	Df	$\bar{x}$	S.D	t-value	p-value
Male	148	439	42.86	4.029	1.289 <sup>ns</sup>	0.198
Female	293		42.11	6.426		

NS: Not Significant at 0.05 level

Table 6 presents the result of t-test result of male and female pre-service teachers response based on their behavioural intention towards electronic teaching. The mean score of the male and female are 42.86 and 42.11 respectively. The t-value of 1.289 was not significant at 0.05 alpha level, and the p-value of 0.198 is greater than 0.05. Therefore, hypothesis two was accepted. This indicates that there is no significant difference between male and female pre-service teachers' behavioural intention towards electronic teaching in Niger State, Nigeria. This implies that both male and female pre-service teachers have the same behavioural intention on electronic teaching.

### **Discussion**

Finding of this study on the self- efficacy of pre-service teachers on electronic teaching in Niger State, Nigeria indicated that pre-service teachers have high level of efficacy in using electronic resources for teaching in Niger state. Hypothesis one finds out if there is significant difference between male and female pre-service teachers' self- efficacy on electronic teaching in

Niger State, Nigeria. The result shows that gender has no influence on pre-service teacher self-efficacy in using electronic resources for teaching with the mean of 35.27 for male and 35.96 for female and the p-value of 0.471 which is not significant at 0.05 alpha level. This finding is in line with the earlier findings of Vehbi (2012) and Margaret and Al-Zahrani (2012), who found out that pre-service teachers have self-efficacy about using electronic resources for teaching.

Finding of this study on the behavioural intention of pre-service teachers towards electronic teaching in Niger State, Nigeria indicated that pre-service teachers have positive intention towards the usage of electronic resources for teaching in Niger state. Hypothesis two finds out if there is significant difference between male and female pre-service teachers' behavioural intention towards the usage of electronic teaching in Niger State, Nigeria. The result shows that gender has no influence on pre-service teachers' behavioural intention towards the usage electronic resources for teaching with the mean of 42.86 for male and

42.11 for female and the p-value of 0.198 which is not significant at 0.05 alpha level. This finding is in line with the earlier findings of Davis and Venkatesh (2004) and Abu-Dalbouh (2013) that an individual's intention to use a particular technology determines the actual usage of such. This study is also in line with the earlier finding of Alharbi and Drew (2014) who found that behavioural intentions of academics towards usage of electronic learning was positive. Pre-service teachers' willingness and positive behavioural intentions towards the usage of electronic resources for teaching and learning was as a result of their level of efficacy in the usage of the package.

### **Conclusion**

Findings of this study have revealed that pre-service teachers in Niger State have high self-efficacy and good behavioural intentions in using electronic resources for teaching irrespective of gender. Actual usage of these resources heavily depend on the training received by pre-service teachers and availability of necessary infra-structures in schools.

### **Recommendations**

Based on these findings, it was recommended that courses on electronic teaching and learning should form integral parts of teacher training programmes in Nigerian institutions. Also, resources that would aid the delivery of teaching in electronic mode should be put in place for teachers in primary and secondary schools in order to ensure usage and in order to improve the quality of teaching.

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