
PERCEIVED TECHNOLOGY USE IN CLASSROOM INSTRUCTIONS BY TECHNICAL TEACHERS IN NORTH-EAST NIGERIA

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ABSTRACT

The study assessed the technical teachers' perceived technology use in classroom instructions in institutions offering Nigeria Certificate in Education (Technical) in North-Eastern Nigeria. Two objectives and two research questions were formulated to guide the study. Descriptive survey design was employed; population was all the 173 technical teachers in the institutions offering Nigeria Certificate in Education (Technical) in North-Eastern Nigeria, a sample of 65 technical teachers was selected using stratified proportional random technique. The instrument Perceived Technology Use Questionnaire (PTUQ) was adapted and validated by two experts in the faculty of Technology Education, Abubakar Tafawa Balewa University Bauchi and used for the collection of data. The reliability of the instrument was found to be 0.82. Mean and Standard Deviation statistics were used to analyze the data. The finding shows that technical teachers perceived substantial benefits in using technology in classroom instructions. The findings show that there is a problem associated with technological self-efficacy hence among the technical teachers in institutions offering Nigeria Certificate in Education (Technical) in North-Eastern Nigeria. Based on these findings it is recommended that the institutions offering Nigeria Certificate Education (Technical) in north-eastern Nigeria should organized seminars and workshops that would help the teachers improve their capability toward the use of technology in their classroom instruction.

Keywords: Technology, Technology use

INTRODUCTION

The rapid pace of technological innovations is gradually changing every facet of human life; teaching and learning inclusive. Using technology in education is not a new phenomenon. Though, the use may be more prevalent now in the 21st century than it has been in the past. There has been a very significant proliferation of literature regarding the use of technology in teaching (Dede, Allen, and Kumar, 2010). Mostly these writings unequivocally accept technology as the most essential part in teaching, if not panacea for every problem that exist in teaching.

According to Kybartaitė (2010) the arrival of new technologies, such as audio and video recordings, CD ROM's, Personal Computers (PCs) or iPods, is often followed by efforts to adapt them for educational purposes. Many web 2.0 applications on the internet such as Wikis, blogs and podcast have also been adopted for educational purposes by professional educators. Nweke (2010) in Bappah-Aliyu (2012) noted that an instructional delivery involving the use of VCD/DVD or power point or 16mm film, still pictures, text, graphics, motion pictures background sound as well as some narrations can be used singly or combined in order to enhance learner's understanding of concepts. Adebayo

(2011) opined that the rapid growth in the use of computer and computer – based technologies over the years have similarly had an impact on the educational system around the world to such an extent that the use of information and communication technologies (ICTs) have become important tools for teaching in schools. Weston (2005) in Haight (2011) observed that the innovations in technology have provided educators with myriad of instructional tools. Classroom technologies such as computers, interactive white boards, and internet connectivity makes it possible to harness pedagogical techniques within classrooms that were never possible before.

There has been considerable research on factors that predict whether individuals will accept and voluntarily use technology in classroom instruction. The Technology Acceptance Model (TAM) was initially proposed by Davis (1989) represents how users come to accept and use a given technology. The model comprises two beliefs, the perceived utilities and perceived ease of application which determine attitudes to adopt new technologies. The attitudes toward adoption will decide about the adopter's positive or negative behaviour and can be applied to teacher's use of educational technologies. According to Davis (1989) the attitude of an individual is not the only factor that determines his use of system, but is also based on the impact which it may have on his performance therefore, even if a teacher does not welcome technology use in classroom instruction, the probability that he will use it is high if he perceives that the technology use will improve his performance in classroom instruction. Perceived ease-of-use can also contribute in instrumental way in improving a teacher's performance due to the fact that the user will have to deploy less effort with a tool that is easy to use, he will be able to accomplish other tasks.

Technology acceptance model is applied in this research in consideration with factors "usefulness" and

"ease-of-use" which determine the perceived technology use in classroom instruction. Perceived usefulness and ease-of-use are factors that determine the use or otherwise of technology by the users. Perceived Usefulness (will the technology enhance my instructional performance?) and perceived ease-of-use (how difficult will it be to use the technology?).

STATEMENT OF THE PROBLEM

Although many teachers used computer and computer-related technology at homes and schools, they were not wholly comfortable with its use within the classroom. Failure of educators to embrace and adopt technology into their pedagogical system is the overarching problem. This failure represents an impediment for students' academic success. According to the International Society for Technology in Education (2008) failure to incorporate technology adversely impacts academic success as students miss the opportunity to acquire skills needed to effectively participate in the global marketplace. In view of that this study determined the technical teachers' perceived technology use in classroom instructions in institution offering Nigeria Certificate in Education (Technical) in the North-Eastern Nigeria.

PURPOSE OF THE STUDY

The main purpose of the study was to assess the technical teachers' perceived technology use in classroom instructions in institutions offering Nigeria Certificate in Education in the North-Eastern Nigeria. Specifically, the study sought to:-

1. Find out the technical teachers' perception on the usefulness of technology in classroom instruction
2. Find out the technical teachers' perception on the ease-of-use of technology in classroom instruction

RESEARCH QUESTIONS

The following research questions guided the study:

1. What is the perception of technical teachers' on the usefulness of technology in classroom instructions?
2. What is the technical teachers' perception on the ease-of-use of technology in classroom instructions?

METHODOLOGY

The research design adopted for this study was descriptive survey; the descriptive survey design was adopted because of the study involves the collection of data from a sample of entire population of the technical teachers in the institutions offering Nigeria Certificate of Education (Technical) in North-eastern Nigeria. The research was conducted in the North-east Geopolitical Zone of Nigeria. The zone comprised of six states: Adamawa, Bauchi, Borno, Gombe, Taraba and Yobe States. Specifically, this research was conducted in higher education institutions (Polytechnics, Federal and States Colleges of Education) offering Nigeria Certificate in Education (Technical). The population of the study was all the 173 technical teachers in the seven institutions offering NCE (Technical) located in the North-Eastern Nigeria. This comprises of one Polytechnic, two Federal Colleges of Education (Technical) and four State Colleges of Education.

The sample for this research consist a total of 70 technical teachers drawn from the Polytechnics, Federal and State Colleges of Education offering Nigeria Certificate in Education (Technical) in North-eastern Nigeria. A stratified random sampling technique was employed; two technical teachers were selected randomly from each of the five technical courses (automobile, building, electrical, metal work and wood work) in the seven NCE awarding institutions forming the strata. All the technical teachers have equal chance of being selected. A structured questionnaire with 8 items

were adapted from Technology Acceptance Model of Davis's (1989) and used for gathering data. The Model is a survey instrument which can be easily adapted for evaluating different technologies in education (Chen, Sivo, Seihamer, Sugar, and Mao, 2014). The instrument was validated by two experts in the Faculty of Technology Education, Abubakar Tafawa Balewa University Bauchi.

To determine the reliability of the instrument a pilot study was conducted at Federal College of Education (Technical) Bichi which is outside the area of this study. A split -half method was employed, Split- half involved splitting the questionnaire items in half (even and odd numbers) and correlating scores of one half with the other half of the instrument, the correlation of the two halves were obtained using Pearson Product Moment Correlation Coefficient, the reliability of the instrument was found to be 0.82 which shows that the instrument is reliable and was used for data collection in this study. The data were collected by the researcher with the help of five (5) trained research assistants who visited the seven institutions offering NCE (technical) in the six states of the North-Eastern Nigeria covered by the study. The questionnaires were administered and retrieved by the researcher and the research assistants within twenty four days of administration. The data obtained were analyzed using the Statistical Package of Social Science (SPSS) Version 21. The research questions were analyzed using statistical mean and standard deviation. A five point Likert type rating scale was used to determine the mean responses on each item of the questionnaire. The cut-off points was 3.00 and above for agreement and less than 3.00 for disagreement.

RESULTS

Research Question One: What is the perception of technical teachers' on the usefulness of technology in classroom instructions?

The result of the perception of technical teachers' on the usefulness of technology in classroom instruction were analyzed and presented in table 1. As

showed in the table, items 1, 2, 3, and 4 have the mean scores of 4.31, 4.03, 4.03 and 4.23 with their corresponding standard deviation of 0.68, 0.88, 0.61 and 0.68. The result of this analysis implied that the technical teachers perceived that there would be benefit in using technology in classroom instruction.

Table 1: Perceptions of the technical teachers on the usefulness of technology in classroom instruction

S/NO	Items	N	Mean	SD	Decision
1.	Using technology in classroom instruction would increase teacher's performance.	65	4.31	0.68	Agreed
2.	Using technology in classroom instruction would enhance teaching effective	65	4.03	0.88	Agreed
3.	Using technology in classroom instruction would increase productivity.	65	4.03	0.61	Agreed
4.	Technology use in classroom instruction stimulates students.	65	4.23	0.68	Agreed

Research Question Two: What is the technical teachers' perception on the ease-of-use of technology in classroom instructions?

The result of the technical teachers' perceptions on the ease-of-use of technology in classroom instruction were analyzed and presented in

table 2. As showed in the table, items 5, 6, 7, and 8 have the mean scores of 3.23, 3.25, 3.20 and 3.57 with their corresponding standard deviation of 1.14, 1.14, 1.03 and 0.83. The result of this analysis implied that the technical teachers perceived that there would be difficulty in using technology in classroom instruction.

Table 2: Perception of technical teachers on the ease-of-use technology in classroom instruction

S/NO	Items	N	Mean	SD	Decision
5.	Technology use in classroom instruction is very cumbersome	65	3.23	1.14	Agreed
6.	There are too many inconsistencies in Classroom instruction using technology	65	3.25	1.14	Agreed
7.	Technology use in classroom instruction Makes teacher restless	65	3.20	1.03	Agreed
8.	Technology use requires fewest steps Possible to accomplish instructional tasks	65	3.57	0.83	Agreed

FINDINGS OF THE STUDY

On the basis of data collected and analyzed, the following are the major findings of the study:

1. Technical teachers perceived substantial benefit in using technology in classroom instruction.
2. Technical teachers perceived difficulties in using technology in classroom instruction.

DISCUSSION OF THE FINDINGS

From table1 the finding of the result revealed that the technical teachers perceived substantial benefit in using technology in classroom instruction. The results is in conformity with Aduwa & Iyamu (2004) who stated that the importance of technology in education is quite evidence. Similarly, Mundy, Kupczynsky & Kee (2012) observed that the use of technology in classroom allows students to engage in a more active way of thinking, literally hand-on learning experience in which they are able to practice executing skills that that would be impossible with a traditional book lesson. Bell & Avis in Mshelia (2012) highlighted that technology provides flexibility, convenience and overcome traditional barriers such as time and place; enhance the learning achievement level of the students, and enhance problem-solving skills and foster peer interaction. In line with this Johnson in Mshelia (2012) observed that when technology is used by teacher, it reduces teacher stress by making the students to be actively involved in learning while in the teacher is turned to as a mere facilitator of the classroom activities.

From table2 the finding of the result revealed that the technical teachers perceived difficulties in using technology in classroom instruction, in line with this Ertmer, Conklin, Lewandowski, Osika, Selo & Wignal (2003) reported that an increase in available technology have manifested since 1990, both teachers and researchers continue to report difficulties with incorporation of these technologies into existing curricula. This implies that the technical teachers lack the capability in using the technology in classroom

instruction. Hence, there is need for retraining programmes such as seminars and workshops. This would help the teachers to improve their capability toward the use of technology in classroom instruction. Otherwise the teachers may not use it in their classroom instruction. This is in agreement with Davis (1989) which predicted that people's intentions to used technology based on their perception of its ease-of use. Similarly, Venketesh (2000) claimed that for any emerging technology, perceived ease-of-use is an important determinant of user's intention of acceptance and usage behaviour. Even if individual convinced about the benefits of technology use in classroom instructions, they may not want to use them if they perceived difficulties in its use (Compeau, et. al, 1995). Perceived ease-of- use determines user's continuance intention to technology use. This has been confirmed by a study conducted on the integration of proposed technology (Hong et al., 2006) as cited by (Shu'aibu, 2014).The significant effects found after the adoption of technology due to perceived ease-of-use indicate that the nature of information technology can be an imperative stipulation in understanding the continued IT usage behaviour (Thong et al., 2006) as cited by (Shu'aibu, 2014).

CONCLUSION

Based on the findings of this study it can be concluded that the technical teachers perceived substantial benefit in using technology in classroom instruction. However, they perceived difficulties in its use in classroom instruction. This means that there is problem associated with technological self-efficacy. Hence, there is need for retraining programmes such as seminars and workshops that would help the teachers improve their capability toward the use of technology in their classroom instruction.

RECOMMENDATIONS

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

1. The institutions offering Nigeria Certificate in Education (Technical) in North-eastern Nigeria should organize seminars and workshops that would help teachers to improve their capability toward the use of technology in classroom instruction.
2. Technical teachers should be encouraged to use technology in their classroom instruction.
3. The federal and state government should provide the technical teachers with adequate computer-related technology for effective use in classroom instruction.

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