

Pre-Service Teachers' Ease of Use and Intention to Use Selected E-learning Technologies in Designing Instruction

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Abstract The process of teacher preparation and training is core to producing good and quality teachers in the classroom. This process is complex and demanding because teachers are agents of change that help shape the skills of future generation. The world is changing so also is the education system and studies have established the importance of using new and digital technologies in the teacher training process. However, the training of teachers, especially pre-service teachers in Nigeria to utilize these tools remain scarce. This study, therefore, examined the ease of use and intention to use new and digital technologies such as Interactive Whiteboard, Camstasia, Mindmapping tools and Microsoft suites in an Instructional Technology course in the Faculty of Education, University of Ibadan, Oyo State, Nigeria. The study adopted an expo facto research design and purposive sampling technique was used to select 273 teacher trainees in five departments (Adult Education, Teacher Education, Guidance and Counseling, Special and Kinetics and Health Education). Three research questions were raised and answered in the study. The findings revealed that ease of use is 83%, which means that the teacher trainees find these technologies easy to use for the teaching and learning process. The result also indicated that the intention to use is 81.7%, which means that the teacher trainees intend to use these technologies in their future classroom. The teacher trainees are motivated to use these technologies, they feel it can enrich their teaching if adequate and proper training is given to them. They find these technologies exciting and flexible to design instructional activities.

Keywords: *e-learning technologies, pre-service teachers, ease of use, intention to use*

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1. Introduction

The maxim in teaching and learning that instructors or teachers teach the way they were taught summarily underscores the importance of putting a conscious effort into teacher preparation and training. In sub-Saharan Africa especially Nigeria, teacher trainees are trained on techniques and methodology of teaching specific school subjects. They carry out practical experiences at different times in their training inform of micro teaching and teaching practices, this is done for at least twelve weeks where the teacher trainees are observed and evaluated based on the performances. As important as teacher preparation and training is, it has encountered several challenges that consequently try to erode its benefits of producing quality teachers. Some of these challenges include inappropriate method of teaching, characterised by mostly lecture method, lack of continuous capacity building. Other challenges include problem of evaluation and assessment, limited basic infrastructure. With the advancement in technology, some of the problems facing teacher preparation in Nigeria can be solved, the role of technology in education is increasing at an exponential

rate and it has greatly impacted the instructional process. It allows students spread over long distances to interact and have access to learning resources and content.

In terms of positive significance, the use of digital devices in instruction is capable of enhancing teacher-student interactions and classroom participation, which consequently promotes engagement and active learning [1]. [2] also opined that a learner who is making use of technology tools through internet is contributing to student learning. [3] concluded that elearning offers interactive technology that promotes new mode of engagement with ideas via online interactivity (social and material); it also offers greater flexibility of provision in time and place. According to [4], it was observed that students that use computers in the classroom are more interested in learning, more motivated to perform well and participate more in the teaching and learning process. In the same vein, [5], indicated that the use internet networked computers enhanced active exploratory learning and also encourage students-students/ teacher-students interaction. [6] in comparing two elearning platforms (Blackboard and MOODLE) observed that both have functionalities that afford teachers to build an effective e-course. They however indicated that there are some challenges in using the platforms, such as; security issue: Malicious web

manipulation software and non-localisation of elearning system's servers. [7] suggested that benefits of using these e-learning platforms is that teachers do not need advanced web development skills, there are various interactive features and with little training and support they will be proficient in using these e-platforms. In like manner, teachers can provide quick and easy means to promote and add diversity to learning and teaching. [8] concluded that teachers need to design class learning activities that incorporate the use of technology. Similarly, [9] found that learners perceived that technological devices had positive influence on their study habits and their academic success.

However, the lack of financial support, high cost of educational software, and low internet bandwidth, inadequate specialized professional development programme are the major obstacle in the use of elearning technologies by teachers in sub-Saharan Africa especially Nigeria which is the focus of this study. [10] also indicated that "challenges like technological illiteracy, extremely limited educational background of some students, lack of time and digital resources, lack of confidence to use digital equipment, untrained lecturer, etc. act as barriers to cause the full potential of ICT to remain untapped. In order to enhance the efficacy of ICT learning environment, teachers and students must be provided ample support in terms of training, equipment and time resources"

1.1. Theoretical Background

Using E-learning tools could be described as the use of technology to support and enhance learning practice and there are theories that provide scientific-based accounts of the predictors which influence the learning process, and provide concrete discussions of the ways in which that influence occurs. One of the theories is the situated learning theory by Lave and Wenger. In situated learning theory, [11] reasons that learning as it normally occurs is a function of the activity, context and culture in which it occurs (i.e., it is situated). It promotes memorisation and rote learning. Social interaction is a vital aspect of situated learning where learners are involved in a "community of practice" which substantiates some behaviours to be acquired.

[12] are researchers that have further developed the theory of situated learning, they emphasized the idea of cognitive apprenticeship: "Cognitive apprenticeship supports learning in a domain by enabling students to acquire, develop and use cognitive tools in authentic domain activity. Learning, both outside and inside school, advances through collaborative social interaction and the social construction of knowledge." This theory supports that knowledge needs to be demonstrated in an authentic context and [13] observed that enhanced contexts can present learners' interpretation of the real world and promote knowledge transmitted to them in different situation and collaboration can enhance the process of generalizing that is grounded in students' situated understanding. In terms of the use of elearning technologies, situated learning theory provides the grounds for learners or trainees to acquire adequate knowledge and skills to use variety of elearning tools and transfer the skills and effectively use them in the classroom. These technologies can provide learners with

simulated environment which will not jeopardise the authentic context which is a hallmark of the theory. This is why [14] confirmed that many of the researchers and teachers exploring the model of situated learning have accepted that the computer can provide an alternative to the real-life setting, and that such technology can be used without sacrificing the authentic context which is such a critical element of the model. In the same way, [15] explains that the principles of knowing according the theory is an activity, is not abstract, is reciprocally constructed in the individual-environment interaction and is interactional. Therefore, using elearning tools applications afford teachers the opportunities to engage students in practical ways of solving problems.

1.2. Research Questions

1. What is the teacher trainees' intention to use selected elearning tools and application for teaching and learning?
2. What is the level of teacher trainees' ease of use in the uptake of selected elearning tools and application for teaching and learning?
3. What other factors influence the uptake of selected elearning tools and application for teaching and learning?

2. Methodology

The case study focuses on the training of teacher trainees on some selected elearning tools and applications in an Introduction to Instructional Technology (TEE 353) course, the course is compulsory for year three students of the Faculty of Education, University of Ibadan. The course is basically about the design and evaluation of instructional system theory, information and communication technology, instructional theory and concepts of basic processes in instructional design, patterns of interaction, electronic tools for designing instruction to mention a few. It is also meant to prepare pre-service teachers to be equipped with pedagogical skills to use the new digital technologies in the classroom among others.

A total of 273 teacher trainees participated in the training; an orientation was organized for them at the beginning of the programme on the pedagogical implications of using the elearning tools. The teacher trainees were then distributed into groups where they were trained on each of the tools for 2 weeks, a total of 12 weeks was used for the training programme. They were involved in hands-on activities and at the end of each training exercise the students develop a product which is evaluated by course tutors and instructor. A total of 10 graduate students trained the teacher trainees with the course instructor supervising the entire training programme. The tutors exposed them to innovative ways of using the tools and created an avenue for the students to ask questions and promptly receive answers to the questions.

The teacher trainees were trained on six elearning tools and applications. They were trained on how to use **Interactive Whiteboard (IWB)** to integrate media content into lecture and how to create interactivity using various features of the IWB. They were also trained to using **mindmapping tool** such as Xmind to create visual

representation or diagram to organize information. They equally learned the use of **camtasia studio** to create and edit instructional videos and **Microsoft excel** to create games and puzzles. Similarly, they were trained to use **Enhanced Powerpoint presentation** to insert text, audio, pictures, videos, as well as functions which allow them to manipulate their presentation and lastly, they learned how to create an inquiry based lesson using **webquest**.

Table 1. The distribution of students based on their departments

Department	Number of students
Adult Education	61
Teacher Education	71
Special Education	37
Kinetics and Health Education	41
Guidance and Counseling Department	52
Others	11

2.1. Results and Discussion

2.1.1. What is the Teacher Trainees' Intention to Use Selected Elearning Tools and Application for Teaching And Learning?

Table 2. Result of intention to use

Elearning tools	No.	Mean	Std dev
Interactive WhiteBoard	273	2.37	1.20
MindMapping tool	273	2.23	1.21
Camtasia	273	2.79	1.44
Excel	273	2.50	1.49
Webquest	273	2.63	1.54
Enhanced powerpoint presentation	273	2.20	1.18
Weighted mean:	2.45		
Percentage:	81.7%		

Table 2 indicates that the mean average of the Pre-service teachers' intention to use the selected Elearning tools is 2.45; this means that the pre-service teachers have a high intention to use the elearning tools with a percentage of 81.7%.

The teacher trainees have a technology goal to use the elearning tools and application because they considered them to impart positively on their teaching process. They seek to promote activities that support the use the tools and similarly and engage in a continuous professional development exercise so that they can continue to maximize the potentials of these tools for instruction. Furthermore, having learned the practical ways to use the elearning tools, the teacher trainees expressed the determination to use the tools in their future classrooms. In addition, the various activities and training that the teacher trainees participated in led to the acquisition of skills, they also believe they will use the tools in their future teaching experiences. The reasons why the teacher trainees have high intention to use these elearning tools and application could be as a result of previous experiences using technology, access to technological devices and training modules. The findings of this study affirmed some positive view in literature. For instance, [16] concluded that the decision and intention of an individual to use elearning technologies is influenced by attitude towards technology, perception that a particular

technology is useful and easy to use. Similarly, [17] indicated that teachers are clearly motivated by media rich learning environment and always want to explore the potentials of using the technology tools.

2.1.2. What is the Level of Teacher Trainees' Ease of Use in the Uptake of Selected Elearning Tools and Application for Teaching and Learning?

Table 3. Result of Ease of Use

Elearning tools	No.	Mean	Std dev
Interactive WhiteBoard	273	2.80	1.90
MindMapping tool	273	3.34	1.96
Camtasia	273	3.50	1.76
Excel	273	3.79	1.87
Webquest	273	2.89	1.20
Enhanced powerpoint presentation	273	3.67	2.01
Weighted mean:	3.33		
Percentage:	83%		

Table 3 indicates that the mean average of the Pre-service teachers' ease of use of the selected elearning tools is 3.33. This means that the pre-service teachers have a high ease of use for the elearning tools with a percentage of 83%.

This study revealed that the teacher trainee in the Faculty of Education, University of Ibadan, Nigeria considered the selected elearning tools and applications easy to use, they are willing and interested in using them in their future classroom, they indicated that through training and practice, they consider the tools comfortable and simple to use. With the course instructor and tutors providing necessary scaffolding activities, they are able to recover from mistakes made quickly and easily. During the training, the teacher trainees expressed their delight in the possibilities inherent in the use of the elearning tools and applications. This could be as the result of several factors ranging from demands of employers to employ individuals that are proficient in using elearning tools, hands-on and scaffolding activities which gave them ample opportunities to master the tools substantially. In like manner, the study of [10] explained that ease and immediacy makes elearning an extremely useful tools. Likewise, MacPhee, Shelley, Karcz, [18], concluded that the ease in using online software for instruction makes teaching and learning effective and interesting.

2.1.3. What Other Factors Influence the Uptake of Selected E-learning Tools and Application for Teaching And Learning?

The participation in a specialized training programme and the willingness of the teacher trainees to acquire the skills to use the elearning technologies are the major factors that influence the uptake of the elearning tools and applications. The need for the teacher trainees to acquire the pedagogical implications of using the tools and the fact that the tools promote interaction and learning among learners are other factors that influence the uptake of these elearning tools. Finally, other factors the teacher trainees mentioned include ability of the teacher to discover simple, new and creative ways to teach the students, develop appropriate evaluation procedure and provide an avenue for the students to learn in their pace. However, the teacher trainee indicated that power outage is a major

factor that could hinder the uptake of these elearning technologies in the secondary schools especially in Nigeria.

3. Conclusion

The present study revealed that teacher trainees are able to acquire set skills to use elearning tools and applications through training and support activities from graduate students and instructor. They considerably find elearning tools easy to use and they also expressed the intention to use these tools in their future teaching endeavours. However, the teacher trainees expressed that power outage could serve as a major hindrance to implementing the use of elearning tools in the classroom.

As an implication for promoting best practices, there must be continuous professional development for teachers so as to update their knowledge and skills in elearning tools and applications because these softwares are updated from time to time, newer versions are developed and variety of features are added. It is the teacher that keep up with the trends and explores that will continue to enjoy the benefits of using the tools.

References

- [1] Stephens, B.R. New Directions for Teaching and Learning. "Notebooks in Psychology: Conducting Flexible In-class Research and Writing Laboratories", Vol 101, pp 15-26. 2005.
- [2] Bhatia, R. Features and Effectiveness of E-learning Tools *Global Journal of Business Management and Information Technology*. 1(1), 1-7. 2011
- [3] Laurillard (2004),
- [4] Trimmel, M. and Bachmann, J. "Cognitive, Social, Motivational and Health Aspects of Students in Notebook Classrooms", *Journal of Computer Assisted Learning*, 20, 151-158. 2004.
- [5] Barak, S. and Wolff-Michael R. Curriculum-Based Ecosystems: Supporting Knowing from an Ecological Perspective, *Educational Researcher*, 35 (5), 3-13. 2006.
- [6] Shadi A., Zahraa M., Ayman N., Faisal A., and Eslam A. "E-Learning tools, and Technologies in education: new trends and challenges", The Fifth International Conference of Learning International Networks Consortium (LINC), The Massachusetts Institute of Technology (MIT) Cambridge, Massachusetts, USA. 2009.
- [7] Parikh, M. & Verma, S. Utilizing Internet Technologies to Support Learning: An Empirical Analysis, *International Journal of Information Management*, 22, 1, 27-46. 2002.
- [8] Paul L., and Aiden T. Digital Devices in Classroom – Hesitations of Teachers-to-be. *Electronic Journal of e-Learning Volume 10 Issue 4*. 2012.
- [9] Demb, A., Erickson, D. and Hawkins-Wilding, S. "The Notebook Alternative: Student's Reactions and Strategic Implications", *Computers and Education*, Vol 43, pp 383-401.2014.
- [10] Tanveer M. Integrating E-learning in Classroom-based Language Teaching: Perceptions, Challenges and Strategies. *ICT for Language learning*. 4th edition. 2011.
- [11] Lave, J., and Wenger, E. *Situated Learning: Legitimate Peripheral Participation*. Cambridge, UK: Cambridge University Press. 1990
- [12] Brown, J. S., Collins, A. and Duguid, P. Situated cognition and the culture of learning. *Educational Researcher*, Vol. 18, No. 1, pp. 32-42. 1989.
- [13] Notari M. Scripting Strategies In Computer Supported Collaborative Learning Environments, Mémoire présenté pour l'obtention du DES STAF, TECFA FAPSE, Université de Genève. 2013.
- [14] Herrington, J. and Oliver, R. Critical Characteristics of Situated Learning: Implications for the Instructional Design of Multimedia. in Pearce, J. Ellis A. (ed) *ASCILITE95 Conference Proceedings (253-262)*. Melbourne: University of Melbourne. 1995.
- [15] Barab, S. A., and Duffy, T.. From practice fields to communities of practice. In D. Jonassen & S. M. Land (Eds.), *Theoretical foundations of learning environments* (pp. 25-56). Mahwah, NJ: Lawrence Erlbaum Associates, Inc. 2000.
- [16] Galy E., Downey C., and Johnson J. The Effect of Using E-Learning Tools in Online and Campus-based Classrooms on Student Performance. *Journal of Information Technology Education Volume 10*, 2011.
- [17] Shroff, R. H. and Vogel, D. R. Assessing the factors deemed to support individual student intrinsic motivation in technology supported online and face-to-face discussions. *Journal of Information Technology Ed-ucation*, 8, 59-85. 2009.
- [18] MacPhee, L., Shelley, E., Karcz, G. How can a course management system (CMS) enhance my online (or faceto-face) course? *Center for Technology Enhanced Learning*. 2003.