

Lecturers' and Students' Perception of E-Assessment in Colleges of Education in Plateau State, Nigeria

¹Dashe Miapmuk Obadiah, ¹Balarabe Yushau & ²Babawuro Shua'ibu

¹Department of Science Education, & ²Department of Vocational Education
Faculty of Technology Education, Abubakar Tafawa Balewa University Bauchi
obedtorpress@gmail.com

Abstract

This study examined the lecturers' and students' perceptions of e-assessment in Colleges of Education in Plateau State, Nigeria. The researcher used a descriptive survey research design for the study. The study population consists of 707 lecturers and 16,700 students drawn from the Colleges of Education in Plateau State. Using a stratified sampling technique, this study used a sample size of 210 lecturers and 320 students selected from the population. The researcher used questionnaire as the instrument for data collection for the study. The questionnaire was validated by an expert and a reliability coefficient of .64 and .90 as a measure of internal consistency was obtained through Cranach Alpha. Statistical Package for Social Sciences (SPSS) version 26 was used to analyze the data, considering a mean score of 2.50 and above interpreted as high perception and a mean score of below 2.50 as low perception. Among the findings, lecturers were found to perceive e-assessment to be useful, with a grand mean value of 3.13 and a standard deviation of 0.89. The findings on the students' responses reveal that the students agreed on the usefulness of e-assessment in Colleges of Education in Plateau State, with a grand mean value of 2.98 and a standard deviation of 0.88. Therefore, it is recommended that management and administrators of Colleges of Education provide an action plan such as making available hardware devices, software, internet connectivity with suitable bandwidth, qualified instructors, and appropriate tools and devices to back up data and records towards the implementation of the e-assessment system.

Keywords: Perception, e-assessment, Lecturers, Students, Usefulness and Knowledge of Technology.

Introduction

Assessment in education is the process that is used to come up with information on the learner's performance through planning, discussion, consensus building, reflection, measuring, analyzing, and improvement (Martell & Calderon, 2005). Mustafa and Mustafa (2018) described an E-assessment as an assessment that involves the use of Information and Communication Technology (ICT) tools during the process of designing, conducting the assessment, and storing the results with the help of ICT. Computers and other relevant technologies provide an important tool to meet the difficulties of designing and applying

assessment methods that go beyond orthodox practices and enhance wide coverage of information, skills, and knowledge (Sontag, Singapore & McNulty, 2011). Despite the substantial changes in higher education teaching and learning strategies with the introduction of Information and Communication Technologies (ICT), little effort has been made in the area of assessment, where traditional methods are still commonly used. The evolution of ICT is providing new opportunities for strategies that can be used for assessment. For this reason, e-assessment is playing an increasingly important role in the transformation of

higher education (Lourdes, Geoffrey, & Ivan, 2017), The importance of assessment in education cannot be over-emphasized, its significance to both teaching and learning. Assessment is used to measure learners' knowledge, understanding, capability, and skill. It contains evaluations and results that influence both teachers and learners, Eva (2012).

Arbaugh (2011) in his assertion on assessment indicated that perceived usefulness and perceived ease of use are the important factors that influence learners' perception of computer-based assessment. Davey's (2011) research shows that technology is one of the options available for conducting assessments in an educational setting. Zhang, Powers, Wright, and Morgan (2003) asserted that in recent times technology offers relevant opportunities for skills and innovation in education sectors for assessment. It makes marking and result compilation easy for lecturers and students can access their results to check their performance online easily.

Olafare, Akins, Orotund, and Antenna's (2017) research shows that the use of paper-based assessment is so unwieldy and boring, especially when the examinations are conducted at various centres on the same date and time. There is a high risk of accidents for both the staff and students involved during movement from their respective homes to the examination centres. There is also subjective scoring and plausible manipulation of results; late release of results and missing grades; bank draft method of payment by candidates riddled by fraud, loss of money, time stress, and trauma in paper-base assessment. Others include malpractice, wastage of stationary, bringing into the examination halls with unauthorized materials, writing on currency notes, laps, palms, and identity cards, spying on other candidates' work in the examination hall, the substitution of answer sheets, and change of examination scores or grades, impersonation, leakage of

questions to students before the examination, conniving with supervisors, invigilators, and school authorities to cheat, body writing or tattoo in which students especially females write on hidden parts of their bodies. The revolution of Information and Communication Technology (ICT) has clear impacts on all aspects of human lives. The utilization of ICT in the conduct of electronic assessment (E-Assessment) is becoming one of the assessment standards globally, which is spanning all learning activities. Tertiary institutions in Nigeria are following the same trend in adopting e-assessment. Conducting assessments using the conventional/traditional method of paper and pencil process of preparing assessments is becoming very cumbersome. It is because of the challenges that the Joint Admission and Matriculation Board (JAMB) now conduct examinations using the Computer-Based Test (CBT). E-assessment serves as a relevant tool for successful assessment delivery. It serves as a shift from conventional methods of paper-based tests. It is an attractive option for higher education institutions looking to address the logistic problems normally associated with large student enrollment (Whitelock, 2010). In light of the foregoing, this study was embarked upon to find out the level of lecturers' and students perceived knowledge of technology and its usefulness in the conduct of electronic assessment in colleges of education in Plateau State, Nigeria.

Statement of the Problem

The predominant mode of student assessment in Nigerian Colleges of Education is paper-based. This is characterized by different forms of examination challenges such as malpractice, wastage of stationary, wastage of time on invigilation, bringing into the examination halls with unauthorized materials, writing on currency notes, laps, palms, and identity cards, spying on other candidates work in the examination hall, substitution of answer sheets and changes

of examination scores. E-assessment solves most of the challenges of traditional methods of assessment in tertiary institutions by saving time and resources. It provides real-time responses to students allowing them to discover areas of dimness and improve their performance. Also, it provides greater flexibility, allowing students to take assessments at their own pace and at a time and place that suits them. The success of e-assessment depends on the teachers' and students' perceptions of the program. It is as a result of this that this study investigated lecturers and students of colleges of education perception of e-assessment.

Objective of the Study

The core objective of this study is to determine lecturers' and students' perceptions of e-assessment in Colleges of Education in Plateau State, Nigeria. Precisely, the research aims to examine

- i. Lecturers' perceived usefulness of e-assessment in Colleges of Education in Plateau State.
- ii. Students' perceived usefulness of e-assessment in Colleges of Education in Plateau State.
- iii. Lecturers' perceived knowledge of the technology of e-assessment in Colleges of Education in Plateau State.
- iv. Students' perceived knowledge of the technology of e-assessment in Colleges of Education in Plateau State.

Research Questions

The following research questions were raised to guide the study.

- i. What is the lecturers' perception of the usefulness of e-assessment in Colleges of Education in Plateaus State?
- ii. What is the student's perception of the usefulness of e-assessment in Colleges of Education in Plateaus State?
- iii. What is the lecturers' perception of the knowledge of technology of e-

assessment in Colleges of Education in Plateau State?

- iv. What is the student's perception of the knowledge of the technology of e-assessment in Colleges of Education in Plateau State

Conceptual framework

Computer-based evaluation is a system in which computer networks are connected using the Standard Protocol Suite (SIPS) to provide basic services to users. For the proper functioning of a computer system used in e-diagnostics, there are two main components: hardware and software. Computer hardware is the part of the computer system that can be heard, seen and touched. A program consists of instructions sent to the system to help the computer process data or information. (Williams, 2007). Bennett (2015) suggested that computer-based tests are a suitable alternative to paper and pencil in educational assessment. E-assessment is an electronic method of conducting examinations and means of communication, improving the processing, management and exchange of data, information and knowledge. E-assessment is a form of assessment in which a computer is part of the assignment. To provide, store results, mark results or provide results of a test or exercise. The use of electronic examinations with the introduction of ICT has greatly reduced the workload of teachers and the examination marking burden in the education sector. Computers and related technologies provide important tools that can be used to reduce difficulties in planning and implementing assessment methods that go beyond traditional practices and to provide access to greater knowledge, experience and skills (Sontag, Singapore, McNulty, 2011).

Theoretical Framework

The study was developed using the Davis Technology Acceptance Model (TAM) as in Ghavifekr & Rosdy (2015). The TAM

theory comprises various parts representing the process of technology acceptance by the users. This includes knowledge of technology, intention to use, perceived usefulness, and perceived ease of use. Perceived usefulness in this study refers to the level at which an individual accepts the importance derived from the use of a particular technology by improving job performance, perceived ease of use on the other side refers to how friendly and flexible a technology is to the users in

achieving a task. The main purpose of developing this theory was to test the effectiveness and value of a system in the execution of a given task (Ghavifekr & Rosdy, 2015). The theory has evolved with more specific variables explaining how a user can accept a technology over the years, as shown in Figure 1.

In this study, the researcher concentrated on the perception of lectures and students on knowledge of technology, usefulness, and ease of use.

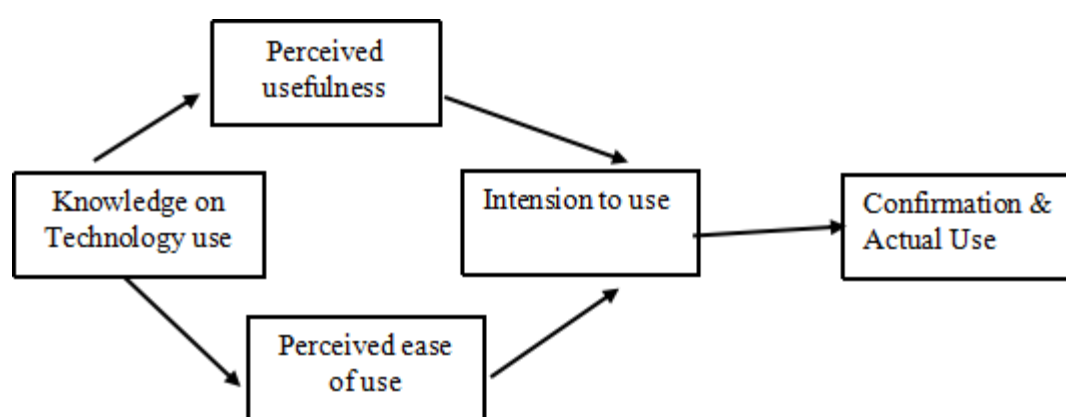


Figure 1: Davis Technology Acceptance Model (TAM) as depicted in (Ghavifekr & Rosdy, 2015)

The Technology Acceptance Model (TAM) theory helps the researcher with a useful road map for the research by enlightening the level of perception of e-assessment of both lecturers and students in Colleges of Education in Plateau State.

Literature Review

E-assessment is an effective way to evaluate student performance or learning in an electronic format. It can also be viewed as a way to measure student performance and measure student performance and course progress. According to Marisa, Zaiyana, Meta, and Zahratul (2020), e-assessment is being replaced by an assessment of student learning through websites or applications. On the other hand, Weleschuk, Dyjur et al. Kelly (2019) explained that e-assessment is the process of evaluating student performance, providing feedback, and helping students improve their online

learning. E-assessment is an important and useful part of the teaching-learning process and takes place in the form of conversation and communication (Adanir, Ismailova, Omuraliev & Muhametjanova, 2020).

The use of e-assessment technology has been researched and is widely used in educational institutions at all levels around the world. Technology in education is seen as a fundamental part of education, not as a complement to education. The importance of this is clear from the fact that 21st century assessment skills are a revolution in education that should be the goal of every educational institution for students. Valdez et al. Maderal (2021) characterizes 21st century students as the most active users of technology and digital media to enhance their learning. Aristovnik, Kerzic, Tomazevic, and Umek (2016) define this as a new generation of students who are

familiar with and adapt to modern technology.

Amar, Ricardo, Valentin, Jingyan, and Daniel (2023) conducted a study to investigate international students' perceptions of distance learning in engineering courses during the COVID-19 pandemic. The study used a detailed questionnaire that the authors completed from a group of experts and 408 participants. Cronbach analysis was performed to determine the internal consistency of the items in the survey, which were examined in three categories. The results show that the gender effect is significant for all subscales and that there is a significant interaction between university and year group. The demand to perform outside the design model was much higher than others.

The research can be compared to Hadjira's (2022) study on teachers' experiences of E-assessment. A survey among foreign language teachers at Algerian universities aims to understand how Algerian English teachers view e-assessment via Moodle. Data were collected through a survey of English teachers and comparative analysis of students' project-based essays during face-to-face and online assessments. Research questions were developed and an electronic survey was used as a data collection tool. Frequency analysis and percentage analysis were used in the analysis of the data collected in the study. The results show that despite the various problems identified in this study; Positive feelings about e-assessment outweigh negative feelings among foreign language teachers in Algerian universities.

Abduh (2021) examined teachers' perceptions of the English as a Foreign Language (EFL) assessment method in Saudi Arabia during the COVID-19 quarantine. The diagram contains good and complete information. A Likert survey was used with 26 foreign language teachers as the research population. The

data collected was analyzed using factor analysis method. The findings show that most English teachers have a moderate attitude towards e-assessment. This researcher said that more research is needed on the attitudes of students towards e-exams and the problems they face while taking e-exams.

As stated by Lawrence and Tar (2018), information and communication technology (ICT) is becoming increasingly important in our daily lives and education system. The acceptance and adoption of ICT for use in assessment largely depends on the availability and accessibility of ICT tools such as hardware, software and websites that can be used by teachers and students during assessment. The following can be seen as some of the benefits of e-assessment.

Tertiary institution students can use e-assessment more easily than traditional methods to achieve their learning goals anytime, anywhere, as long as they have a stable network and internet connection. Sarah and Rashid (2018) state that e-exams are the best time and place for exams and their flexibility allows students to complete their assignments freely and on time.

Kebritchi, Lipschuetz, and Santiago (2017) believe that the integration of e-assessment makes students independent in their learning processes. Students can learn better with e-exams than with paper and pencil. Thus, students plan and manage their time well and organize their studies well.

E-tests generally give students results faster than paper and pencil. Alruwais et al. (2018) stated that e-assessment provides direct and instant feedback to students. Rolim and Isaias (2018) state that in this way, detailed and rapid information can be given to students through e-assessment.

Thanks to the benefits provided by e-assessment to traditional methods, students are promoted in certain subjects,

allowing them to strengthen their studies and increase their performance. The findings of the study conducted by Romeu, Romero, and Guitar (2016) show that thinking quickly is beneficial to students and helps them improve their learning. Since ICT is used in all types of e-assessment, data and information provided through electronic means can be collected and analyzed in a timely, efficient and effective manner (Alruwais et al., 2018).

Methodology

Based on the purpose of this study, the researcher implemented a survey

research design in particular, a descriptive survey to collect information on the perception of the respondents involved in the study. The area of the study was Plateau State which is one of the states located in North Central Nigeria. The total population of the study consists of 707 lecturers and 16,700 students drawn from the three (3) accredited Colleges of Education in Plateau State by the National Commission for Colleges of Education (NCCE) as shown in Table 1.

Table 1: Population Distribution of Lecturers and Students of the three (3) Colleges of Education in Plateau State, Nigeria

S/ N	Institutions	Population of Lecturers	Population of Students
1	Federal College of Education (FCE) Pankshin	423	10,222
2	College of Education (COE) Gindiri	226	6,127
3	Osward Waller College of Education Shendam	58	351
TOTAL		707	16,700

Source: From the Statistics Office of each college of Education (2023)

The sample size of the study was 210 lecturers and 320 students. To ensure fair representation of the Colleges of Education in Plateau State, the respective

sample sizes were allocated proportionately to each college based on their population Creswell (2012).

Table 2: Sample Size Distribution of Lecturers and Students

S/N	Institutions	Sample Size of Lecturers	Sample Size of Students
1	Federal College of Education (FCE) Pankshin	126	196
2	College of Education (COE) Gindiri	67	117
3	Osward Waller College of Education Shendam	17	7
TOTAL		210	320

Two sets of structured questionnaires were divided into two sub-scales; usefulness and knowledge of technology. The information on usefulness contains 10 items and the information on knowledge of technology with 10 items. The questionnaires tagged Lecturers' Perception of E-assessment Survey Questionnaire (LPESQ) and Students' Perception of E-assessment Survey Questionnaire (SPESQ) were used for the

collection of data. The instruments for data collection were adapted from Davis's (1989) Technology Acceptance Model (TAM). Face and content validation was used on the instruments, and the structured questionnaires (LPESQ and SPESQ), together with the objectives and research questions of the study were validated by an expert in the field of test and measurement. A pilot study on the instruments was conducted at the College

of Education Gidan Waya, Kaduna State to determine the reliability of the instruments. The Cronbach Alpha reliability was found to be .64 for lecturers and .89 for students.

The questionnaires were administered to 210 lecturers and 320 students in the three (3) NCCE accredited Colleges of Education in Plateau State involved in the study by the researcher with the help of research assistants. The research assistants in each of the sample colleges of education distributed the questionnaire to both lectures and students and after respondents had finished filling in the required information, the research assistant retrieved the questionnaire and returned it to the researcher within two weeks for analysis with a total valid questionnaire returned rate of 194 for lecturers and 260 for students.

The collected data was analyzed using the Statistical Package for Social Sciences (SPSS) version 26 program. A 4-point rating scale was used to weigh the

response of the items in the questionnaire as 4 = 'Strongly Agree' (SA), 3 = 'Agree' (A), 2 = 'Disagree' (D), 1 = 'Strongly Disagree' (SD).

$$\text{The Average mean} = \frac{\sum f}{N} = \frac{4+3+2+1}{4} = \frac{10}{4} = 2.50$$

A mean score of above 2.50 was used to interpret as a high perception and a mean score of below 2.50 as a low perception.

In this study, the researcher is required to examine the Lecturer's and Students' perceptions of e-assessment in colleges of education in Plateau State. Both lecturers and students were given a questionnaire that contained the items on usefulness and knowledge of technology for e-assessment, analyzed and presented in the tables below.

Research Question One:

What is the lecturers' perception of the usefulness of e-assessment in Colleges of Education in Plateaus State?

Table 3: Mean Rating and Standard Deviation on the Lecturers' Perception of the usefulness of e-assessment in Colleges of Education in Plateaus State.

S/N	Item Statements	N	Mean	Std.	Remark
1.	Using electronic assessment gives me greater control over my exams	194	3.53	.76	Agreed
2.	Using electronic assessment improves my job performance	194	3.06	.73	Agreed
3.	Using electronic assessment saves me time	194	3.28	.98	Agreed
4.	Using electronic assessment improves the quality of the work I do	194	3.11	.83	Agreed
5.	An electronic assessment system enables me to accomplish the conduct of assessment more quickly.	194	3.18	.94	Agreed
6.	The electronic assessment system provides helpful guidance in the conduct of examinations	194	2.99	.94	Agreed
7.	Using an electronic assessment system enhances my effectiveness in the conduct of examinations	194	2.95	.93	Agreed
8.	The electronic assessment system addresses my assessment-related needs.	194	3.03	.92	Agreed
9.	My assessment would have been difficult to perform without an electronic assessment system	194	3.04	.92	Agreed
10.	I find the electronic assessment system useful in my job	194	3.12	.91	Agreed
Total and Grand Mean		194	3.13	0.89	Agreed

Source: Field Study (2023).

Table 3 above displays the lecturers' perceptions regarding the usefulness of e-

assessment in colleges of education in Plateau State. The findings from the table

indicated that the lecturers perceive e-assessment to be useful, with a mean value ranging from 2.95 to 3.53 and a standard deviation (S.D.) ranging from 0.73 to 0.98. The overall grand mean is 3.13, with a standard deviation of 0.89. This grand mean exceeds the average response of 2.50 on a 4-point rating scale. Thus, it can be

concluded that the lecturers agreed on the usefulness of e-assessment in Colleges of Education in Plateaus State.

Research Question Two:

What is the student's perception of the usefulness of e-assessment in Colleges of Education in Plateaus State?

Table 4: Mean Rating and Standard Deviation on the Students' Perception of the usefulness of e-assessment in Colleges of Education in Plateaus State

S/N	Item Statements	N	Mean	Std.	Remark
1.	Using e-assessment as a substitute for paper and pencil tests has improved my performance	260	3.25	.85	Agreed
2.	E-assessment gives me more confidence during my examination.	260	3.19	.84	Agreed
3.	I use e-assessment for my exams because is the only option in my institution	260	2.87	.88	Agreed
4.	I find E-assessment useful for all my examinations	260	2.99	.86	Agreed
5.	The E-assessment system has given me a greater knowledge of its usefulness in exams.	260	2.95	.88	Agreed
6.	The E-assessment system enhances my effectiveness in academics because it produces the desired result	260	2.98	.87	Agreed
7.	E-assessment environments are conducive to assessment	260	2.87	.90	Agreed
8.	Using an e-assessment system has increased my skills and knowledge of writing exams on the screen.	260	2.94	.90	Agreed
9.	Using an e-assessment system as supplementary to paper and pencil tests has improved my performance.	260	2.95	.88	Agreed
10.	The use of an e-assessment system has increased my test anxiety	260	2.85	.89	Agreed
Total and Grand Mean		260	2.98	0.88	Agreed

Source: Field Study (2023).

Table 4 presents the students' perception regarding the usefulness of e-assessment in Colleges of Education in Plateau State. The findings indicate that the students' perceived usefulness of e-assessment ranges from a mean of 2.85 to 3.25, with a standard deviation (S.D.) ranging from 0.84 to 0.90. The overall grand mean is 2.98, with a standard deviation of 0.88. The grand mean exceeds the average

response of 2.50 on a 4-point rating scale. This reveals that the students predominantly agreed on the usefulness of e-assessment in Colleges of Education in Plateau State.

Research Question Three:

What is the lecturers' perception of the knowledge of technology for e-assessment in Colleges of Education in Plateau State?

Table 5: Mean Rating and Standard Deviation on the Lecturers' Perception of the Knowledge of Technology for e-assessment in Colleges of Education in Plateaus State.

S/N	Item Statements	N	Mean	Std. Deviation	Remark
1.	Interacting with an electronic assessment system requires a lot of mental effort	194	3.00	1.03	Agreed
2.	It is easy for me to remember how to perform tasks using the electronic assessment system	194	2.94	.92	Agreed
3.	I need to consult the user manual often when using electronic assessment	194	2.60	.99	Agreed

4.	I require ICT knowledge to use an electronic assessment system	194	2.99	.98	Agreed
5.	I often become confused when I use the electronic assessment system for my students	194	2.63	1.05	Agreed
6.	I know basic terms used with computers for the conduct of e-assessment	194	3.01	.85	Agreed
7.	I know internet applications to conduct e-assessment exams	194	3.03	.97	Agreed
8.	I am aware that e-assessment is quicker and better than paper and pencil test Methods	194	3.10	.99	Agreed
9.	I am aware that E-assessment provides greater storage efficiency for students' records for e-assessment	194	3.01	.97	Agreed
10.	I have seen an internet modem/internet-enabled computer	194	3.02	.91	Agreed
Total and Grand Mean		194	2.93	0.92	Agreed

Source: Field Study (2023).

Table 5 presents the lecturers' perceptions regarding their knowledge of technology for e-assessment in Colleges of Education in Plateau State. The results indicate that the lecturers' perceived knowledge of technology for e-assessment falls within a mean range of 2.60 to 3.10, with a standard deviation (S.D.) ranging from 0.85 to 1.05. The overall grand mean is 2.93, with a standard deviation of 0.97.

The grand mean of 2.93 is higher than the average response of 2.50 on a 4-point rating scale. This signifies that the lecturers agreed with their level of knowledge regarding e-assessment in Colleges of Education in Plateau State.

Research Question Four

What is the student's perception of the knowledge of technology for e-assessment in Colleges of Education in Plateau State?

Table 6: Mean Rating and Standard Deviation on the Students' Perception of the Knowledge of Technology for e-assessment in Colleges of Education in Plateaus State.

S/N	Item Statements	N	Mean	Std.	Remark
1.	I am aware that e-assessment is unbiased test administration and scoring	260	2.89	.92	Agreed
2.	I have a basic knowledge of ICT for e-assessment	260	2.99	.83	Agreed
3.	I use the internet to source information for assignments.	260	2.94	.89	Agreed
4.	The enlightenment about the e-assessment exam in my college is adequate.	260	2.83	.87	Agreed
5.	I know internet applications.	260	2.94	.85	Agreed
6.	I am aware that Computers are used for examinations in my college	260	2.82	.95	Agreed
7.	I type and produce documents for my Continuous assessment (CA)	260	2.81	.94	Agreed
8.	I don't have the knowledge of computers for e-assessment.	260	2.77	.98	Agreed
9.	I can use input devices during e-assessment exams	260	2.93	.92	Agreed
10.	I can boot and shut down a computer	260	2.85	.95	Agreed

during e-assessment exams

Total and Grand Mean	260	2.88	0.91	Agreed
-----------------------------	------------	-------------	-------------	---------------

Source: Field Study (2023).

Table 6 presents the perceptions of students regarding their knowledge of technology for e-assessment in Colleges of Education in Plateau State. The results indicate that the students' perceived knowledge of e-assessment falls within a mean range of 2.77 to 2.99, with a standard deviation ranging from 0.83 to 0.98. The overall average, or grand mean, is 2.88, with a standard deviation of 0.91. Notably, the grand mean exceeds the average response of 2.50 on a 4-point rating scale. This discloses that the students broadly agreed on their level of knowledge regarding e-assessment in Colleges of Education in Plateau State.

Discussion

The result in Table 3 displays the mean and standard deviation responses of research question one with ten items on the lecturers' perceptions regarding the usefulness of e-assessment in colleges of education in Plateaus State. The results from the table showed that the lecturers perceive e-assessment to be useful, with a mean value ranging from 2.95 to 3.53 and a standard deviation (S.D.) ranging from 0.73 to 0.98. This shows that the lecturers agreed on the usefulness of e-assessment in Colleges of Education in Plateaus-State. This finding of the study agreed with the result of the study conducted by Yulianto and Mujtahin (2021) on English Language Teachers' (ELT) perspectives and their practices on the use of e-assessment during COVID-19. Their discussion revealed surprising results that most of the teachers thought that e-assessment was hard to conduct because many problems arose during the implementation. Nevertheless, the teacher does not deny that e-assessment is very useful for giving assignments to students during a pandemic. Therefore, it can be concluded that the lecturers in colleges of education in Plateau State have agreed that using electronic assessment improves the quality of the work they do and also

enhances the effectiveness of the conduct of the examination. To further support the result of the research in Table 3, the research conducted by Samuel, Igbokwe & Emmanuel (2021) on the views of lecturers on the effectiveness of the use of computer-based test examination mode for large classes in Nigerian universities shows that the CBT mode of examination has aided in conducting examinations that involve a large number of students. Therefore e-assessment is useful to lecturers of colleges of education in Plateau State.

The finding in table four shows the responses to the research questions raised in research question two on the perception of students' usefulness of e-assessment in colleges of education in Plateau State. The findings indicate students agreed with the mean rating on perceived usefulness of e-assessment that e-assessment is very useful in the conduct of assessment in Colleges of Education in Plateau State with the grand mean exceeding the average response of 2.50 on a 4-point rating scale. The finding is in line with the study conducted by Adanir, et al. (2020) which investigated and compared students' perceptions of e-examinations at State Universities in Turkey and Kyrgyzstan via a mixed study research design whose finding indicated that e-assessment gives students a high advantage in terms of reduced cost of transportation, ease of access and the immediate display of examination results.

Table 5 presents the lecturers' perceptions regarding their knowledge of technology for e-assessment in Colleges of Education in Plateau State. The responses of the respondents in this table answer research question three which seeks to know the perception of lectures on knowledge of technology for e-assessment in colleges of education in Plateau State. The results

indicated that the lecturers' perceived knowledge of technology for e-assessment was rated high with more of the responses of the respondents showing agreement to the research questions with a grand mean of 2.93 and a standard deviation of 0.97. This signifies that most of the lecturers are aware that e-assessment is quicker and better than paper and pencil methods of conducting assessment and do not need to consult the user manual before using electronic assessment. This finding is contrary to the finding of Adetoun Idowu, Mary Esere, and Betty-Ruth Iruloh (2017) on computer accessibility, usage and Lecturers' Perceptions of innovative ICT-Based Assessment in a Nigerian University where the finding on the knowledge variable interpretation shows that most lecturers (especially those in the senior cadre) do not have satisfactory knowledge in the use of computer for e-assessment and this may have informed their attitude to innovative ICT based assessment in colleges of education.

Similarly, the results of the findings in Table 6 with ten items responded to research question 4 which seeks to know the perceptions of students' knowledge of technology for e-assessment in the Colleges of Education in Plateau State. The results indicate that the students' perceived knowledge of e-assessment falls within the mean range of 2.77 to 2.99, with a standard deviation ranging from 0.83 to 0.98 agreeing that students' knowledge of technology was rated very high. The grand mean of 2.88, with a standard deviation of 0.91 exceeds the average response of 2.50 on a 4-point rating scale therefore the result indicated that most students of colleges of education have knowledge of technology for e-assessment. This discloses that the students agreed on their level of knowledge regarding e-assessment in Colleges of Education in

Plateau State. This finding agreed with the findings of Huda, Kabir, and Tanvir (2020) on E-Assessment in Higher Education, Students' Perspectives, where the outcome of the survey indicated a positive reply about e-assessment in terms of their knowledge and competency in utilizing ICT facilities for e-assessment by the students.

Conclusion

This survey was conducted to determine the perception of Lecturers and Students regarding e-assessment in colleges of education in Plateau State. The results were based on participants' answers about the importance and knowledge of e-assessment technology. Students and Lecturers were in favour of e-assessment due to its benefits. As a result, lecturers and students agreed on the effectiveness of Education's e-assessment evaluation system.

Recommendation

At the end of the findings of this study, recommendations were proffered on how to advance the lecturers' and students' of Colleges of Education level of knowledge on technology and understanding of the usefulness of e-assessment in tertiary institutions as follows:

1. Since the majority of lecturers and students agreed on the usefulness of e-assessment then the management and administrators of Colleges of Education in Plateau State should work towards the implementation of e-assessment system.
2. Lecturers and students' perceptions of e-assessment revealed that e-assessment facilities are easy to use. Therefore, more skills acquisition training on e-assessment facilities is required to improve the competence and utilization of digital tools and strategies in all aspects of teaching

- and e-assessment in Colleges of Education in Plateau State.
3. Institutions should provide easily accessible technical support and instructors to guide the students during the conduct of e-assessment
 4. Before deciding to use e-assessment platforms, practitioners should be sure that all instructors and students have access to the required hardware, software, and Internet connection with suitable bandwidth and appropriate tools and software to back up data and records.
- ### References
- Abduh, M. (2021). Full-time online assessment during COVID-19 lockdown: EFL teachers' perceptions. *Asian EFL Journal*, 28(1), 1–22.
- Adanir, G., Ismailova, R., Omuraliev, A. & Muhametjanova, G., (2020). Learners' perceptions of online exams: A comparative study in Turkey and Kyrgyzstan. *International Review of Research in Open and Distributed Learning [online]* Available at: <<http://www.irrodl.org/index.php/irrodl/article/view/4679/5331>> [Accessed 10 April 2021].
- Adetoun, I., Mary, E., & Betty-Ruth, I. (2017) Computer Accessibility, Usage and Lecturers' Perception of Innovative ICT-Based Assessment in a Nigerian University. *Sustainable Transformation in African Higher Education* 215-226
- Alruwais, N., Wills, G., & Wald, M. (2018). Advantages and challenges of using e-assessment. *International Journal of Information and Education Technology*, 8(1), 34–37
- Amar, K. B., Ricardo, Alves, S., Valentin, O., Jingyan, D. & Daniel, F. (2023) Student perceptions of remote learning transitions in engineering disciplines during the COVID-19 pandemic: a cross-national study. *European Journal of Engineering Education*. 48, (1), 257-265.
- Arbaugh, J. B. (2011). Virtual Classroom Characteristics and Student Satisfaction with Internet-Based MBA courses. *Journal of Management Education*, 24 (1), 32-54.
- Aristovnik, A., Kerzic, D., Tomazevic, N. & Umek, L., (2016). *Determining factors of students' perceived usefulness of e-learning in higher education*. Unpublished Paper presented at the International Association for Development of the Information Society (IADIS) International Conference on e-Learning, Madeira, Portugal, Jul 1-4, 2016, Part I, pp. 3–10. Available at: <https://eric.ed.gov/?id=ED571462> [Accessed 11 September 2021]
- Davey, T. (2011). Practical Considerations in Computer-Based Testing. Educational Testing Service, Retrieved on September, 14th 2014 from <http://www.est.org/media/research>.
- Davies, F. D. (1989). Perceived usefulness, Perceived Ease of Use, and User Acceptance of Information Technology. *MIS Quarterly* 13(3), 319-339
- Eva, S. (2012). Implementation and student perceptions of e-assessment in a Chemical Engineering module.

- European Journal of Engineering Education*, Vol. 38, No. 2, 172–185.
- Ghavifekr, S. & Rosdy, W.A.W. (2015). Teaching and learning with technology: Effectiveness of ICT integration in schools. *International Journal of Research in Education and Science (IJRES)*, 1(2), 175-191
- Hadjira, H. (2022) Teachers' Experience in E-assessment: Case Study of EFL Teachers in Algerian Universities. *Arab World English Journal (AWEJ)*. 13(1).450-461 DOI: <https://dx.doi.org/10.24093/awej/vol13no1.29>.
- Huda, S. S. M., Kabir, Md. & Tanvir. S. (2020) E-Assessment in Higher Education: Student's Perspective. *International Journal of Education and Development using Information and Communication Technology (IJEDICT)*, 16(2), 250-258
- Kebritchi, M., Lipschuetz, A., & Santiago, L. (2017). Issues and Challenges for Teaching Successful Online Courses in Higher Education: A Literature Review. *Journal of Educational Technology Systems*, 46(1), 4-29. <https://doi.org/10.1177/0047239516661713>.
- Lawrence, J., & Tar, U. (2018). Factors that influence teachers' adoption and integration of ICT in the teaching/learning process. *Educational Media International*, 55(1), 79-105. <https://doi.org/10.1080/09523987.2018.1439712>
- Lourdes G.; Geoffrey, C. & Ivan, A. (2017) Trends and Challenges of E-Assessment to Enhance Student Learning in Higher Education. www.igi-global.com/chapter/trends-and-challenges-of-e-assessment-to-enhance-student-learning-in-higher-education/159966?camid=4v1. DOI: 10.4018/978-1-5225-0531-0.ch003
- Marisa, Y., Zaiyana, P., Meta, K. & Zahratul I. (2020). Pre-Service English Teachers' Perception Towards Online Assessment Method. *IJELR: International Journal of Education, Language and Religion*, 2(1), 1-10. <https://doi.org/10.35308/ijelr.v2i1.1933> or Retrieved from <http://jurnal.utu.ac.id/IJELR/article/view/1933>.
- Martell, K., & Calderon, T. (2005). Assessment of student learning in business schools: What it is, where we are, and where we need to go next. In K. Martell & T. Calderon, *Assessment of student learning in business schools: Best practices each step of the way* (Vol. 1, No. 1, pp. 1-22). Tallahassee, Florida: Association for Institutional Research.
- Mustafa, B. & Mustafa, A. (2018). Attitude towards e-assessment: influence of gender, computer usage and level of education. *Open Learning: The Journal of open, distance and e-learning*. <https://doi.org/10.1080/02680513.2018.1503529>
- Olafare F.O., Akinoso S. O., Omotunde C. & Annenne V. (2017) Students' perceptions of computer-based test in Nigerian universities. *Nigerian*

- Journal of Educational Technology*, 1(2), 5-17.
- Rolim, C., & Isaias, P. (2018). Examining the Use of E-Assessment in Higher Education: Teachers and Students' Viewpoints. *British Journal of Educational Technology*, 50(4), 1785-1800.
<https://doi.org/10.1111/bjet.12669>
- Romeu, F. T., Romero, C. M., & Guitert, C. M. (2016). E-assessment process: giving a voice to online learners. *International Journal of Educational Technology in Higher Education*, 13(1), 1–14.
<https://doi.org/10.1186/s41239-016-0019-9>
- Sarah K. & Rashid, A. K. (2018). Online assessments: Exploring perspectives of university students. *Education and Information Technologies*, 24, 661–677. <https://doi.org/10.1007/s10639-018-9797-0>.
- Samuel, O. E., Igbokwe, N. J. & Emmanuel, A. O. (2021). Perceived effectiveness of computer-based test examination mode for large classes among undergraduates of Nigerian Universities: Implications for social work. *Journal of Social Work in Developing Societies* ISSN: 1115-3946. 3(1), 62-77.
- Sonntag, B., McNulty, J.A. & Sinacore J. (2011). Test-taking behaviours on a multiple-choice exam are associated with performance on the exam and with learning style. *Journal of the International Association of Medical Science Educators* 2007; 17(1).
- Valdez, M. T. C. C., & Maderal, L. D., 2021. An Analysis of Students' Perception of Online Assessments and its Relation to Motivation Towards Mathematics Learning. *The Electronic Journal of e-Learning*, 19(5), 416-431, available online at www.ejel.org
- Weleschuk, A., Dyjur, P., & Kelly, P. (2019). Online Assessment in Higher Education. *Taylor Institute for Teaching and Learning Guide Series. University of Calgary*. Retrieved from <https://taylorinstitute.ucalgary.ca/sites/default/files/TI%20Guides/Online%20Assessment%20Guide-2019-10-24>.
- Whitelock, D. (2010). Activating assessment for learning: Are we on the way with Web 2.0? In M. J. W. Lee & C. McLoughlin (eds), *Web 2.0-based e-learning: Applying social informatics for tertiary teaching* (pp. 319–342). PA: IGI Global.
- Yulianto, D., & Mujtahin, N. M. (2021). Online assessment during COVID-19 pandemic: EFL teachers' perspectives and their practices. *Journal of English teaching*, 7(2), 229–242.
<https://doi.org/10.33541/jet.v7i2.2770>.
- Zhang, Y., Powers, D. E., Wright, W., & Morgan, R. (2003). Applying the Online Scoring Network (OSN) to Advanced Placement Program (AP) tests. Educational Testing Service. Princeton, NJ: Retrieved August 17, 2012
from <http://www.ets.org/research/researcher/RR-03-12.html>