

Teachers' Perceptions and Undergraduate Students' Experience in E-Exam in Higher Institution in Nigeria

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Abstract

This study was conducted to explore teachers' perceptions, and students' experiences in e-Examination in University of Maiduguri. Questionnaires were distributed to 30 teachers and 50 students, and the 80 collated instruments were valid for data analysis, representing a response rate of 100%. The validity of the questionnaire was approved by some experts in the field. Descriptive statistics was used to analyzed the data. The descriptive results indicated that teachers' and students' exposure and experiences to ICT was low. The findings further revealed that both the teachers and students agreed that e-Examination is important to them and more efforts should be gear toward improving its integrity. Furthermore, both the teachers and students agreed that e-Examination is not the true reflection of the students' performance if used as the only way of measurement. From the findings of the study, it is recommended that courses such as computer supported learning, and e-Examination process, should be introduced periodically for teachers and students' exposure to the nature of e-Examination through practice and drill to improve teachers' and students' level of confidence and perceptions towards the use of e-Examination.

Keywords: Teachers, Students, ICT, e-examination, higher education, institution

1. Introduction

The term information & communication technology has expanded to encompass many aspects of computing, technology and is more recognizable than ever before. The information technology umbrella can be quite large, covering many fields and concepts. There are numerous definitions of ICT, but the definition by UNESCO is accepted by the researcher as adequate. Most definitions created an impression that ICTs are only computers /computer systems and failed to capture many other ICTs, but UNESCO (2002) defines ICT as "forms of technology that are used to transmit, process, store, create, display, share or exchange information by electronic means." This definition covers such technologies as radio, television, videotape, audiotape, tape recorder, compact disc (CD), digital versatile disc (DVD), flash drive, telephone (both fixed line and mobile), satellite systems and computer hardware, software and networks. It covers also services associated with these devices, such as video-conferencing, email and blog.

During the past few decades, there have been a phenomenal growth in communication technology, computer network and information technology. Development of new broadband communication services and convergence of telecommunication with computers have created numerous possibilities to use a variety of new technology tools for teaching and learning system. The integration of computers and communications offers unprecedented opportunities to the education systems with its capacity to integrate, enhance and interact with each other over a wide geographic distance in a meaningful way to achieve the learning objectives. Furthermore, the growth of these communications, computer systems and their proliferations in educational environment allow teachers and students to have access to a world beyond the classroom which increase flexibility of learning and mobility of learners (Sheard & Carbone, 2008; Uyouko & Wong, 2015). It has the potential to transform the nature and process of the learning environment and envision a new learning culture. Interactivity, flexibility and convenience have become the order of the day in the ICT supported environment. There is a move from teacher-centred to student-centred education, and another is a move from the traditional to the virtual classroom. Furthermore, there is a shift from eLearning to mobile learning and advance to cloud-based learning system as current advancement in computing technology. Important for understanding this systems are the perspectives of both students and educators. The students' interests and experiences of their educational environment influence their approach to learning and ultimately their learning outcomes which influence the implementation and adoption (Berglund & Wiggberg, 2006, Sheard & Carbone, 2008, Uyouko & Wong, 2015).

2. Statement of the Problem

There are a number of studies on students' and academics' perceptions, skills and practices of ICT in higher education in the developing countries (Mofreh et al., 2013; Uyouko & Wong, 2015; Makura, 2015), research on

the perceptions of academics on students' experiences on the use of e-examination are limited. Moreover, there is a misconception of academics on students learning experiences in the virtual world which can help to make decision on curriculum & pedagogical design (Gebremedhin & Fenta, 2015; Makura, 2015). Investigating students' and academics' perspectives may be useful for informing curriculum design or pedagogical approaches and may also help address misconceptions about course content or the teaching and learning environment (Greening, 1998). Reconciling these misconceptions is critical for the provision of an educational environment that accommodates the needs and interests of the students (Sheard & Carbone, 2008). Although, there have been studies of students and academics perspectives in tertiary education on ICT in teaching and learning, very few studies were found that investigated from both perspectives on the domain of e-examination perceptions. There is the tendency of using ICT in teaching and learning strongly depends on the attitudes and perceptions of teachers and students. This study aim to investigate teachers' perception and students' experiences in e-examination in the University of Maiduguri.

3. Objectives of the Study

The objectives of this study are to:

1. Determine teachers' and students' socio-economic characteristics as it influence their perception and experiences toward e-examination respectively.
2. Determine teachers' perception and students' experiences in e-examination respectively.

4. Related Studies

There are literatures that shows that students and academics have not universally embraced this new educational paradigm brought by ICT in teaching and learning. In a study by Buabeng-Andoh (2012) at Pentecost University College, Ghana using a survey method to find the perception and skills of teachers in the use of ICT in teaching and learning, he found that that teachers have not shifted from teacher-centered instruction to student-centered learning. From the findings of the study, it is recommended that courses such as computer supported learning, ICTs and designing instructional materials should be introduced in initial teacher training programs to improve teachers' level of confidence and perceptions towards the use of ICT. Furthermore, Mofreh et al., (2013) investigates Lecturers' Perceptions On Teaching Functions Among The Lecturers Of Community Colleges, Yemen using a survey method and found that there is a gap between the lecturers' perceptions on their teaching functions and their responsibilities they have to do as lecturers at which may influence their teaching practice. Thus, lecturers should rethink and realize their roles in teaching, and they should use their own perceptions in order to build up new beliefs on teaching functions using ICT. Moreover, study by Gebremedhin & Fenta (2015) on Assessing Teachers' Perception on Integrating ICT in Teaching-Learning Process at Adwa College, Ethiopia found that majority of the teachers pointed out that one of the barriers to technology implementation is lack of teachers' technical knowledge and shortage of resources. This shows that equipping the college with ICT is not enough for attaining educational change; and conclude that the college should critically focus to integrate ICT in each course to make courses interactive and easily understandable by their students. Moreover, Nwankwoala (2015) on investigating Lecturers' and students' use of ICTs in Nigerian university education as a panacea for national development at Ignatius Ajuru University of Education, Port Harcourt using a random sampling of 146 academics and 1008 students revealed that gender of university lecturers did not predict their usage of ICT while it also revealed that ICT usage contributed to national development. It was recommended among others that the National universities Commission (NUC) should commence an urgent review of the course content of university education, with a view at compulsorily incorporating ICT usage as a standard for all teaching, learning and examinations. Similarly, Makura (2015) on Students' Perceptions of the Use of ICT in a Higher Education Teaching and Learning Context in the South African University revealed that Students' perceptions in the use of ICT by themselves and their lecturers did not differ much. Moreover, they suggested ways in which lecturers could use more ICT for teaching and learning purposes

On the other hand, electronic examination reduces a large proportion of workload on examination (formalities or requirement) training, grading and reviewing, thus bringing the ability for the institution to release examination results in record time. This is because where ordinarily, the lecturer would spend weeks marking scripts manually, the computer would grade the students as soon as they finish their exams (Iwuchukwu, 2014). Ayo et al. (2007) defined e-examination as a system that "involves the conduct of examinations (formalities, requirements) through the web or the intranet". Ayo et al. Further stated that though the definition of Wikipedia is that of e-assessment is to relate to e-examination, e-assessment in its broadest sense is the use of information

technology for any assessment related activity. Ayo et al. further stated that e-examination reduces the large proportion of workload on examination, training, grading and reviewing, thus bringing the ability for the institution to release examination results in record time; this is because where the lecturer would spend weeks marking scripts manually, the computer would grade the students as soon as they finish their exams. Fowles & Adams (2005) further stated that without the introduction of e-learning in teaching and learning, e-Assessment (e-Exams & e-Tests) will be difficult to introduce. Raikes & Harding, (2003) stated that the uses of computers are well known and apparent in teaching and learning process, but its integration to exams in education has not been fully utilized. E-examination is much easier to introduce or use than e-learning that's why e-examination have been introduced in developed countries way back in 70s and in Nigeria universities it has been used for past 10yrs but not e-learning.

Hochlehnert, et al., (2011) states that Electronic examination automate **a very time consuming task**, marking and monitoring progress and it enables easier control and editing of exam items, gives room for better incorporation of exams into the learning environment using specific feedback. Furthermore, they opined that the use of Electronic examination combines advantages with respect to content (integration of other media, favourable presentation of pictures, and possibility of other examination formats) with rapid data analysis.

Studies on e-exams such as Adewale et al., (2011) carried out a research on perception of learners on electronic examinations in open and distance learning institutions using National Open University of Nigeria as a case study, and reported that the difference in students' perception based on the reduction of examination malpractice, wide coverage of the scheme of work, students' academic performance, and inadequate facilities. More studies trend has also led to so many research works on e-examination as well as web-based studies, not only in Nigeria, but also globally such as Ricketts and Wilks (2001) investigated the appropriateness of using electronic examinations system for teaching numeracy and statistics on two hundred first year Biology students in higher education, they discovered that students' performance was poor when online assessment was used and students had difficulty in interacting with computer screen.

The implementation of electronic examinations comes along with a significant change of the academic examination culture. A sustainable success in implementing electronic exams depends upon the overcoming of infrastructural, technical, methodological, and juridical barriers (furnishing adequate PC pools, procurement of adequate software, successful integration into curricula, adaptation of examination regulations, etc. Furthermore, electronic examinations are not appropriate for all bodies of knowledge and scientific disciplines alike due to the limitations of an automatic correction of complex questions and exercises. Therefore, electronic examinations unfold their strengths primarily in assessing basic knowledge, hence gradual implementation is most appropriate suggestion for academic institutions (Piotrowski & Rösner, 2005). Study by Adegbija et al., (2012), further reported that the problem of a technical failure on the day of examination especially in places or some of the developing countries that experience eclipitic electricity is quite alarming, and could be dangerous where there are no backups.

University of Maiduguri has recently adopted e-Examination in some their courses, it is worthwhile to study and understand the perception of teachers and students experiences in order to make policies in improving the implementation.

5. Methodology

5.1 Data Type and Sources

The study employed quantitative data to explore the perception of teachers and students experiences in e-Examination. In this research basically, primary data source was employed to gather first-hand information to achieve the objectives of the research. The study was conducted among undergraduate students and academics staff of the University of Maiduguri. The instrument used was tagged TPUSEEHIN.

The sampling techniques used is simple random sampling and representative involved students and academics in the faculty of education, University of Maiduguri. A sample size of 50 undergraduate students comprising 30 male students and 20 female students, and 30 academics staff comprising 12 male teacher and 18 female teachers was used as the representative of the sample frame to explore

5.2 Data Collection

The research design adopted for the study was survey design. The research location was University of Maiduguri. The intention was to tap into the students' experiences and academics perceptions on e-examination, the instrument was a questionnaire design by the researcher. The first section of the questionnaire focused on socio-economic information of the participants as it influence their perception of e-exam. The second section consists

of Likert-type questions on e-examination perceptions. The academics was asked to rate their perception of e-exam, while on the other hand, students was asked to rate their experiences in e-examination using structured questionnaires which was delivered personally to each participants

5.3 Data Analysis

This study is explorative in nature using a case study of University of Maiduguri to explore the students' experiences and teachers' perception toward e-Examination. Therefore, data was analysed using simple descriptive statistics. The researcher used descriptive statistical technique to determine the frequencies and percentages of the data collated to make inform decision and conclusion about academics perceptions and students experiences in e-examination

5.4 Results

In this section, results from the information gathered were presented including teachers and students demographic characteristics, teachers' perception and undergraduate students' experience in E-examination.

Table 4.1: Demographics characteristics of teachers (N = 30)

Characteristics	Frequency	Percentage (%)
Gender		
Male	12	40
Female	18	60
Educational Qualification		
Ph. D	8	26.7
M. Sc.	22	73.3
Teaching experience		
11 – 15 years	7	23.3
6 – 10 years	10	33.3
1 – 5 years	13	43.3
Years of ICT experience		
5 year and above	9	30
1 – 3 years	21	70
ICT usage		
Daily	17	56.7
Weekly	4	13.3
Monthly	9	30

Table 4.1 shows the demographic characteristics of academics (teachers); 40% of the academics were male and 60% were female of which 26.7% of both male and female were Ph. D holders while, 73.3% were M. Sc. Holders. It was also revealed that 23.33% have 11 – 15 years of teaching experience, 33.33% have 6 – 10 years teaching experience and 43.3% have 1 – 5 years of teaching experience. The table also revealed that 30% of the Academics have ICT experience of 5 years and above, 70% have 1 – 3 years of ICT experience. The table further shows that majority of the academics (56.7%) used ICT on daily basis, while 30% used ICT monthly and 13.3% used ICT weekly

Table 4.2: Demographics characteristics of Students (N = 50)

Characteristics	Frequency	Percentage (%)
Gender		
Male	30	60
Female	20	40
Parent exposure to ICT		
Experienced		
Intermediate	4	8
Beginners	9	18
Not at all	22	44
ICT experience	15	30
5 years and above		
1 -3 years	1	2
Not at all	43	86
ICT usage	6	12
Daily	12	24
Weekly	7	14
Monthly	1	2
Occasionally	11	22
As need arises	19	19

Table 4.2 show the demographic characteristics of students; 60% of the students were male, 40% were female of which majority (44%) of their parents were beginners in ICT exposure, 30% of their parents never had any experience of ICT, 18% were intermediate and 8% of their parents were experienced in ICT exposure. The table also revealed that majority (86%) of the students have 1 – 3 years' experience in ICT, 12% did not have any ICT experience at all, and 2% had ICT experience of 5 years and above. Majority (38%) of the students uses ICT when the need arises, 24% of them used ICT daily, 22% of them used ICT occasionally, 14% of them used ICT weekly and only 2% of the total students used ICT monthly.

Table 4.3: Male students' experience in e-examination (N = 30)

Statements	Strongly Agree		Agree		Disagree		Strongly disagree	
	F	%	F	%	F	%	F	%
1. Using e-examination have improved my performance	7	23.3	14	46.6	6	20	3	10
2. E-examination has reduce cheating and victimization in examination	12	40	16	53.3	2	6.7	0	0
3. E-examination have helped in my learning skills	6	20	17	56.6	5	16.7	2	6.67
4. E-examination is technical and involves computing skills	9	30	17	56.7	3	10	1	3.33
5. E-examination doesn't reflect my full performance	8	26.7	14	46.6	5	16.6	3	10
6. E-examination doesn't reflect my expression skills	9	30	8	26.6	9	30	4	13.3
7. The time allocated for e-examination is always sufficient	3	10	7	23.3	12	40	8	26.6
8. E-examination causes anxiety during examination	2	6.67	19	63.3	3	10	6	20

Table 4.3 reveals that Majority (46.7%) of male students' respondents agreed that E-examination improved their performance, while 23.3% strongly agree that e-examination improves their performance, 20% disagree that e-examination doesn't improve their performance and 10% strongly disagree that e-examination improve their performance.

The table further revealed that majority (53.3%) of male students agreed that E-examination have

reduced cheating and victimization in examination, 40% strongly agreed and 6.7% Disagreed that e-examination have reduces victimization in examination. While 56.7% agreed, 20% strongly agreed, with the view that e-examination have helped them in their learning skills 16.7% disagreed and 6.7% strongly disagreed that e-examination does not help in their learning skills. 56.7% of the male students agreed, 30% strongly agreed that e-examination is technical and involves computing skills, while 10% disagreed and 3.33% disagreed that e-examination is not technical and does not involves computing skills. It was also revealed that 46.67% of the respondent agreed, and 26.7% strongly agreed that e-examination does not reflect their full performance while 16.7% disagreed and 10% strongly disagreed that e-examination does not reflect their full performance. The table went further to indicate that 30% strongly agreed and 26.7% agreed that e-examination does not reflect their expression skills. 23.33% agreed and 10% strongly agreed that the time allocated for e-examination is always sufficient, while majority (40%) of the respondents strongly disagreed and 26.7% disagreed that the time allocated for examination is always sufficient. The table went further to reveal that 63.3% agreed and 6.7% strongly agreed that e-examination caused anxiety during examination, while 20% strongly disagreed and 10% disagreed that e-examination causes anxiety during anxiety.

Table 4.4: Female students' experience in e-Examination (N = 20)

Statements	Strongly Agree		Agree		Disagree		Strongly disagree	
	F	%	F	%	F	%	F	%
1. Using e-examination have improved my performance	1	5	10	50	7	35	2	10
2. E-examination has reduce cheating and victimization in examination	9	45	7	35	3	15	1	5
3. E-examination have helped in my learning skills	5	25	9	45	3	15	3	15
4. E-examination is technical and involves computing skills	5	25	9	45	2	10	4	20
5. E-examination doesn't reflect my full performance	3	15	7	35	8	40	2	10
6. E-examination doesn't reflect my expression skills	2	10	8	40	4	20	6	30
7. The time allocated for e-examination is always sufficient	1	5	1	5	7	35	11	55
8. E-examination causes anxiety during examination	5	25	5	25	7	35	3	15

Table 4.4 reveals that Majority (50%) of female students' respondents agreed that E-examination improved their performance, while 5% strongly agree that e-examination improves their performance, 35% disagree that e-examination doesn't improve their performance and 10% strongly disagree that e-examination improve their performance.

The table further revealed that majority (35%) of female students agreed that E-examination have reduced cheating and victimization in examination, 45% strongly agreed and 15% Disagreed and 5% strongly disagreed that e-examination have reduces victimization in examination. While 45% agreed, 25% strongly agreed, with the view that e-examination have helped them in their learning skills 15% disagreed and 15% strongly disagreed that e-examination does not help in their learning skills. 45% of the female students agreed and 25% strongly agreed that e-examination is technical and involves computing skills, while 10% disagreed and 20% strongly disagreed that e-examination is not technical and does not involves computing skills. It was also revealed that 35% of the respondent agreed, and 15% strongly agreed that e-examination does not reflect their full performance while 40% disagreed and 10% strongly disagreed that e-examination does not reflect their full performance. The table went further to indicate that 10% strongly agreed and 40% agreed that e-examination does not reflect their expression skills. 20% and 30% disagreed and strongly disagreed respectively, that e-examination does not reflect their expression skills. Majority (55%) of the respondent strongly disagreed and 35% disagreed that the time allocated for e-examination is always sufficient, while 5% of the respondents strongly agreed and 5% agreed that the time allocated for examination is always sufficient. The table went further to reveal that 50% of the respondent agreed that e-examination caused anxiety during examination, while 50% also disagreed that e-examination cause's anxiety during anxiety.

Table 4.5: Male lecturers' perception on E-examination (N = 12)

Statements	Strongly Agree		Agree		Disagree		Strongly Disagree	
	F	%	F	%	F	%	F	%
1. Using e-examination is beneficial to both students and academics	10	83.3	2	16.6	0	0	0	0
2. E-examination is not the best standard of measuring students' performance	7	58.3	2	16.6	1	8.3	2	16.6
3. E-examination provides a vehicle of cheating	3	25	3	25	5	41.6	1	8.33
4. E-examination ease the bulk load of marking	8	66.7	1	8.33	2	16.7	1	8.33
5. Examination doesn't provide a measurement of students' expression skills	2	16.6	3	25	6	50	1	8.33
6. E-examination make students lazy and over dependency on ICT facilities	8	66.6	3	25	1	8.33	0	0
7. E-examination saves time	9	75	2	16.6	18.3	8.3	0	0

Table 4.5 reveals that 100% of the male academics agreed that using e-examination is beneficial to both students and academics. 75% of the academics also agreed that e-examination is not the best standard of measuring students' performance, while 25% of the respondents disagreed that e-examination is not the best standard of measuring students' performance. It was also revealed that 50% of the respondents agreed that e-examination provides a vehicle of cheating, while 50% of the respondent disagreed that e-examination provides a vehicle of cheating. 75% of the academics agreed that e-examination ease the bulk load of marking, while 25% disagreed. 41.7% of the respondents agreed that e-examination doesn't provide a measurement of students' expression skills, while 58.33% disagreed. The table went further to reveal that 91.7% of respondents agreed that e-examination make students lazy and over dependency on ICT facilities, while 8.33% disagreed. 91.7% of the respondents agreed that e-examination save time, while 8.33% disagreed that e-examination saves time.

Table 4.6: Female lecturers' perception on E-examination (N = 18)

Statements	Strongly Agree		Agree		Disagree		Strongly Disagree	
	F	%	F	%	F	%	F	%
1. Using e-examination is beneficial to both students and academics	2	11.1	9	50	5	27.7	2	11.1
2. E-examination is not the best standard of measuring students' performance	0	0	9	50	4	22.2	5	27.7
3. E-examination provides a vehicle of cheating	4	22.2	6	33.3	38.9	1	5.56	
4. E-examination ease the bulk load of marking	0	0	1	5.6	7	50	8	44.4
5. Examination doesn't provide a measurement of students' expression skills	4	22.2	9	50	9	22.2	1	5.56
6. E-examination make students lazy and over dependency on ICT facilities	4	22.2	1	5.6	4	50	4	22.2
7. E-examination saves time	3	16.7	7	38.9	9.5	27.7	3	16.6

Table 4.6 reveals that 61.1% of the female academics agreed that using e-examination is beneficial to both students and academics, while 38.9% disagreed. 50% of the academics also agreed that e-examination is not the best standard of measuring students' performance, while 50% of the respondents disagreed that e-examination is not the best standard of measuring students' performance. It was also revealed that 55.6% of the

respondents agreed that e-examination provides a vehicle of cheating, while 44.5% of the respondent disagreed that e-examination provides a vehicle of cheating. 5.6% of the female academics agreed that e-examination ease the bulk load of marking, while 94.4% disagreed. 72.2% of the respondents agreed that e-examination doesn't provide a measurement of students' expression skills, while 27.8% disagreed. The table went further to reveal that 27.8% of respondents agreed that e-examination make students lazy and over dependency on ICT facilities, while 72.2% disagreed. 55.6% of the respondents agreed that e-examination save time, while 44.45% disagreed that e-examination saves time.

6. Discussion of Results

The findings of this study revealed that majority of students and teacher used ICT daily despite the low level of experiences. The study further revealed that teachers' and students' level of experiences and exposure to ICT are low. From the study, it can deduce that students' low level of exposure could be attributed to the low level of their parents' exposure to ICT. The result is in agreement with Safro & Ansong-Gyimah (2015) and Makura (2014) who found similar results, and that teacher and students' exposure to ICT is important in ICT integration. Researchers argued that teachers' and students' exposure to ICT is critical in successfully integration into teaching and learning (Rosenfield & Martinez-Pons, 2005; Makura, 2014).

In this study, on the teacher's perceptions of e-Examination, majority of them agreed that e-Examination is helpful for both student and teachers. Teachers agreed that even though e-Examination doesn't reflect true students' performances, provide vehicle for cheating and make student lazy, not best way to measure students' performance alone, and over-dependency on ICT products, however, the study revealed that majority agreed that e-Examination lessen the burden associated with examination processing and saves times. This study is similar to the results of Ayo et al (2007), Hochlehnert, et al., (2011), and Iwuchukwu (2014) who argued that electronic examination reduces a large proportion of workload on examination, training, grading and reviewing, thus bringing the ability for the institution to release examination results in record time. This is because where ordinarily, the lecturer would spend weeks marking scripts manually, the computer would grade the students as soon as they finish their exams.

On the students' experiences, this study revealed that majority of the students agreed that e-Examination improved their performance, learning skills and reduce cheating which agree with teachers' view in this study that e-Examination is helpful for both students and teachers. However, few students agreed that e-Examination doesn't provide the true reflection of their performance if used alone similar to the agreement of teachers that e-Examination is not the best way to measure students' total performance. This study is similar to Adewale et al., (2011) who carried out a research on perception of learners on electronic examinations in open and distance learning institutions using National Open University of Nigeria as a case study, and reported that the difference in students' perception is based on the reduction of examination malpractice, wide coverage of the scheme of work, students' academic performance, and inadequate facilities. Other studies argued that Furthermore, electronic examinations are not appropriate for all bodies of knowledge and scientific disciplines alike due to the limitations of an automatic correction of complex questions and exercises and some aspects of complex achievement are difficult to measure using objective-type questions. Therefore, electronic examinations unfold their strengths primarily in assessing basic knowledge, hence gradual implementation is most appropriate suggestion for academic institutions (Piotrowski & Rösner, 2005, Ayo et al., (2007).

From the results of the study, it is recommended that both students and teachers be given sufficient and specific training on how to use ICT into teaching and learning by acquiring specific knowledge and skills in integrating technology in classrooms. Students exposure to e-examination through practice and drill will help reduce anxiety and difficulty during the examination day. Furthermore, professional development program be provided continuously for teachers to update their ICT knowledge and skills. Makura (2014) believed that professional development such as computer supported learning, ICTs and design of teaching materials should be introduce to teachers to increase their level of confidence and perceptions of the use of e-Examination administration.

7. Limitations and Further Research

This study was limited to only teachers and students in the department of education. The other limitation was the analysis which used simple percentages and frequencies. For future study, similar quantitative research can be carried out in other faculties and department, and higher education institutions implementing e-Examination. Further research can also be carried out to examine the correlation between teachers' and students' socio-economic characteristics and their perception and experiences in e-Examination respectively.

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