# Exploring EFL Student Teachers' Perspectives on E-exams in EFL College Settings: a Descriptive Study

**By**

**Dr. Ahmad A. Alshehri**

**Assistant Professor**

**College of Education, King Khalid University, Saudi Arabia**

## Abstract

The current study is trying to explore EFL college learners' views regarding the usefulness and practicality of e-exams. A sample of student-teachers were asked to indicate their views concerning e-exam on a thirty-six item questionnaire. A descriptive research method employing surveys was adopted for this research. Convenient sampling sorted out fifty-three EFL college students in the College of Education to participate in the study voluntarily by filling in consent forms. The study findings revealed that the participants were satisfied with e-exams since the overall mean score of their attitudes was (3.75). All the questionnaire statements were rated high on all items except four items were rated as moderate. Based on the study results, recommendations for pedagogy were drawn, suggesting that more emphasis should be given to the mass application of e-exams in EFL classrooms. They should be applied to a wide range of academic courses. Suggestions for further research were forwarded at the end, suggesting that a similar study should explore the views of faculty members regarding e-exams.

**Keywords:** E-exams, EFL, student teacher.

# استكشاف وجهات نظر متعلمي اللغة الإنجليزية كلغة أجنبية حول الامتحانات الإلكترونية في البيانات الجامعية لتدريس اللغة الإنجليزية كلغة أجنبية: دراسة وصفية

**اعداد**

**د. احمدعاطف الشهري**
**الاستاذ مساعدبكلية التربية بجامعة الملك خالد**

الملخص

تحاول الدراسة الحالية استكشاف وجهات نظر متعلمي اللغة الإنجليزية في المستوى الجامعي فيما يتعلق بجدوى الامتحانات الإلكترونية وعمليتها؛ حيث طُلب من عينة من الطلاب المعلمين توضيح وجهات نظرهم بشأن الامتحانات الإلكترونية في استبيان مكون من ستة و ثلاثين مفردة. و قد اعتمد الباحث منهجية البحث الوصفي القائم على استخدام المسوح لهذا البحث. و شملت عينة البحث ثلاثة و خمسين من الطلاب المعلمين المتخصصين في تدريس اللغة الإنجليزية كلغة أجنبية في كلية التربية للمشاركة في الدراسة طواعية من خلال المعاينة بالمواءمة. وكشفت نتائج الدراسة أن المشاركين كانوا راضين عن الامتحانات الإلكترونية؛ حيث إن المتوسط العام لاتجاهاتهم كان (3.75). تم تقدير جميع عبارات الاستبيان للدلالة على مستوى عالٍ من الاتجاه الإيجابي نحو الامتحانات الإلكترونية على جميع البنود باستثناء أ أربعة عبارات تم تصنيفها على أنها متوسطة. بناءً على نتائج الدراسة، تم استخلاص توصيات تربوية تشير إلى أنه ينبغي التركيز بشكل أكبر على التطبيق الشامل للاختبارات الإلكترونية في الفصول الدراسية للغة الإنجليزية كلغة أجنبية؛ حيث ينبغي التوسع في تطبيقها على مجموعة واسعة من المقررات الأكاديمية. و تم وضع اقتراحات لإجراء مزيد من البحوث، مما يوحي بأن دراسات مماثلة يجب أن تستكشف آراء أعضاء هيئة التدريس فيما يتعلق بالامتحانات الإلكترونية.

**الكلمات المفتاحية**: الامتحانات الإلكترونية؛ اللغة الإنجليزية كلغة أجنبية؛ الطلاب المعلمون

## Introduction

The literature available on language learning assessment strongly indicates that this process of evaluation is central to educational practice. According to William (2002, cited in Ridgway et al.., 2007, p.7), well-designed assessment is associated with major gains in student attainment on a wide range of conventional measures of attainment. Ridgway et al.. (2007, p.7) further elaborated that "good assessment practices produce large performance gains." In this line, too, Angus and Watson (2009) (cited in Baleni, 2015, p.228) emphasize that assessment is the core of formal higher education". The integration of new technology in the educational field resulted in less focus on paper-based assessment. Information and Communication Technology (ICT) played and is still playing a major role in the educational process. In this context, Baleni (2015, p. 228) states that "the use of online and blended learning has developed dramatically in the 21st century higher education learning and teaching environment.

Therefore the term "e-assessment" is emerging as a major driver for E-learning for both students and staff (JISC: 2). The forms and tools of assessment are varied. Yet, exams are still a major and an important instrument of student assessment. Yaman and Cagitaly (2010, p.1631). In this paper, an exploration into electronic exams will be carried out. Students perspectives regarding such exams will be explored.

E-assessment - as defined by Ridgway et al. (2007, p.40) – is a " processes involving the implementation of ICT for the recording, transmission, presentation, and processing of assessment material." Graff (2003, p.22) defines online assessment as "a method of using computers to deliver and analyze tests or exams." Electronic exam (e-exam) can be classified under the umbrella of electronic assessment and therefore, it can be defined as a test conducted using any electronic devices (i.e., personal computer), by which the exam is delivered, responses are received and analyzed, assessment and feedback are provided.

In fact, there is a wide range of terms in the literature which are connected to e-assessment and they can be used alternatively to talk about it. Among these terms are computer-based assessment (CBA), computer-based testing (CBT),computer assisted assessment (CAA), online assessment and web-based assessment.

The fast development of technology has changed not only the way people

learn but also in many other fields. People daily life, work, and communication are affected by the innovation in the field of technology. Technology became a solution for many problems that the traditional education encounters. For example, the increasing number of students, less qualified teachers and trainers and some demographic issues are partially solved by the integration of technology in the educational process. The availability of electronic learning devices have facilitated the process of learning and teaching more than any time before. Thus, E-learning became a vital axis in any conceptual frameworks of many educational institutions. This huge attraction of E-learning for many learners, teachers and stakeholders and the availability of E-learning tools and systems make it possible to evaluate the learning process with more confidence. E-learning management systems make it easier to conduct electronic assessment either synchronously or asynchronously, and either on campus or off camps. However, though technology is a major driver for learning, it is still useless unless stakeholders are equipped with all necessary skills to deal with such innovation. Ridgway et al. (2007) asserts that these skills are required for fluent use of ICT.

There is a good amount of literature focuses on the performance of e-exam takers and some factors affecting it. For example, Nikou and Economides (2013) mentioned some factors that might affect the performance of test takers. Amongst them, computer familiarity, computer anxiety, computer attitude, interactivity, user interface, screen size, scrolling, modes of item presentation, multimedia and graphics. Blazer (2010) reported that several studies indicate that students with more computer skills receive higher scores on computer-based tests than students with fewer computer skills. Alamri (2007) further explained the factors that might affect the performance of CBT takers. He reported several studies that indicate such factors. Of them, Talyor et al. (1999), who focus on computer familiarity as one of the main factors that plays a major role in the performance of e-exam takers. They added, computer familiarity encompasses computer use, computer experience, awareness of technology and information technology, having access to computers at home, school or elsewhere.

## Pros and cons of E-assessment

Although technology might solve some of the problems we face in the educational process, it is not a magic stick to all learning and teaching problems. Some people who have an extremist positive view towards technology think that E-learning is an ideal alternative for face to face teaching. In fact, like any other field, it has its advantages and drawbacks. E-exam as well, and as a part of E-learning, has some pros and cons. Before proceeding to discuss the advantages and disadvantages of e-exam, it is better to remember some of the virtues of paper-based exams. Ridgway et al. (2007, p.17)

summarize these virtues in the following points: "a) all stakeholders are familiar with all aspects of the medium, b) paper is robust – it can be dropped, and it still functions, c) there are rarely problems of legibility, d) high-resolution displays are readily available, e) students can take questions in any order, f) users can input cursive script, diagrams, graphs, tables, g) a number of equity issues have been solved – it is easy to create large fonts and to solve other access problems paper-based testing systems are well established - it is relatively easy to prevent candidates from copying from each other, for example, h) paper is easy to distribute, and can be used in most locations, i) in extreme circumstances, it is possible to copy an examination paper, and find another desk, j) human judgments are brought to bear throughout the process, so the scope of questions is unconstrained."

Noyes and Garland (2008) divided the advantages of online assessment into five categories as follows; a) the richness of the interface: this can be in the form of graphics for better presentation of content. Interface richness also means proving immediate feedback for test takers, b) the user population: e-exams can be addressed to a huge number of test takers. They can perform the exam from a certain place like a laboratory or from home if suitable, c) standardization of test environment: it means the test is presented in the same way and same format for a specific time. Another benefit is the handwriting factor is removed, and this gives more objectivity, d) online scoring: it takes only seconds to analyze the responses of test takers and providing them with feedback, e) quantity and quality of composition: according to Goldberg et al. (2003), reported in Noyes and Garland (2008), there is a significant effect size, which favored computers in both quantity and quality of writing. This result was obtained by a meta-analysis of studies comparing computer-based tests and paper-based tests over a ten-year period.

Blazer (2008) mentioned several points concerning the advantages of computer-based assessment as follows; a) more interactive questions: such as simulations, online experiments, and animation, b) adaptation to learners' ability levels: test items are programmed to evoke less difficult items if the previous responses of test takers are wrong. Correct responses, on the other hand, evoke difficult items gradually, c) providing data on students' testing strategies: these data, for example, include time spent on each item, d) meeting needs of special populations: such as learners with disabilities and those from divers linguistic backgrounds, e) immediate feedback: quick scoring and analyzing of test takers responses results in quicker feedback for learner, teachers and decision makers, f) more standardization of test administrations: this is a result of accurate timing, g) availability of helping tools: for example, dictionaries and calculators can be made available if they are required by certain parts of the test, h) providing security advantages: unlike paper-based tests,

computer-based tests can be stored electronically on certain servers or databases and can be distributed just on time. Furthermore, tests can be delivered randomly to reduce cheating, i) less financial expenses and easy revising: electronic exams can be delivered to a huge number of learners with no need for printed materials. Also, typing errors, for example, can easily be corrected, j) reducing the costs: which are spent on entering, collecting and analyzing data, k) saving staff time: because of electronic processing of exams output, teachers can save time to spend on other aspects of the learning process.

Despite the advantages mentioned above, E-assessment has some drawbacks. Noyes and Garland (2008, p.1369) shed light on some of these disadvantages as follows: "a) lack of a controlled environment with responses being made at various times and settings and perhaps not even by the designated individual, b) computer hardware and software: these may be subject to freezing and crashing; in the test setting, time can be wasted when computers have to be restarted or changed, c) the computer screen: for longer tests, it may be more tiring to work on the computer than on paper, d) serial presentation: it is difficult to attain equivalence with computer and paper presentation. As a general rule, it is easier to look through items and move backwards and forwards when using paper, e) concerns about confidentiality: this is particularly the case with internet-based assessments and raises a number of ethical and clinical issues."

Blazer (2008) further adds to these drawbacks the following: a) technical problems: unlike broken pencils, networks or computers break down or hang up takes time to fix. Moreover, it is necessary to do backup for data frequently, b) extra cost: starting up an assessment systems requires some infrastructure, software, hardware, staff training, technical support, etc, c) equity issues: some learners might have more access to computers or have more literacy skills than others, d) equipment variation: some institutions are well equipped with necessary E-assessment tools, while others lack some of these tools. Therefore, strict standards should be provided to assure that all schools have the same level of facilities provision, e) lack of technical support: some institutions do not have enough support to keep electronic systems functioning properly and equipment running softly, f) provision of computer laboratories: some institutions do not have enough capacity to set an e-exam at one session. Therefore, more than one session should be scheduled, g) need for training: teaching staff need to be trained to use the assessment systems properly. Administrators and students need such training as well.

## 3. Review of some related studies

There is a huge amount of literature focuses on testing and assessment. A good portion of this literature dealt with computer-based tests and paper-based tests. These studies, in general, tried to make a comparison between both types

and what are the factors that might affect the performance of test takers.

Yaman and Cagitaly (2010) compared paper-based to computer-based testing in Engineering education. They investigated the performance of 209 first-year engineering students on both modes of testing. The study finding revealed that there is no significant performance difference between both modes. The study further found that there are some factors connected to performance and they should be taken into account when comparing PBT to CBT. These include personal characteristics of test takers, the features of computer-based testing systems and the test content.

While Yaman and Cagitaly (2010) looked at the performance of test takers within two different modes, Nikou and Economides (2013) investigated the achievement of students through three modes; paper, web, and mobile based assessment. The sample of this study consisted of 203 first-year undergraduate students, 73 males (35%) and 130 females (49%), enrolled in an introductory informatics course, in the Department of Economic Sciences of a Greek University. The study findings revealed that there are statistically significant differences in test scores of first year undergraduate students of Economics in the subject of ICT among mobile based test (MBT), computer-based test (CBT) and paper-based test (PBT) in favour of MBT.

Another study by Jamil and Shami (2012) explored the perceptions of teachers regarding computer-based and paper-based examinations. 410 teachers from public universities in Pakistan were asked to respond to the study survey. Teachers were divided into seven categories, i.e., gender, departments, designations, qualifications, teaching experiences, computer training certifications and CB examination experiences. The study findings showed that the teachers' attitudes were positive towards computer-based examinations. Nevertheless, they preferred paper-based examinations in some situations.

Akdemir and Oguz (2008) compared the scores achieved by students through different two modes; computer-based and paper-based testing. They developed two versions of exam; one is electronic while the other is a traditional paper and pencil test. The participants were 47 student teachers in their final year at a Turkish university. The results of the study revealed that there was no difference in the scores concerning the two versions of the exam.

With regard to e-exams, a recent study by Hillier (2014) explored the pre-conceptions of over 480 undergraduate students studying at an Australian university regarding e-exams. He used a twenty-four item questionnaire covering pedagogical suitability, fairness, security, cheating, technical reliability, keyboard proficiency, physical comfort, equipment provision and preferences for pen-on-paper or computer-based testing. The overall results showed that the participants were optimistic about the

idea of e-exams. They expressed a variety of pre-conceived feelings such as the risk of technical failures and cheating.

Donovan et al. (2000) tried to answer this question "Does computerizing paper-and-pencil job attitude scales make a difference?". Two scales; the Supervisor Satisfaction scale and the Coworker Satisfaction scale, were examined across computerized and paper-and-pencil administrations. 2286 employees from three organizations participated in this study. The employees of two organizations were administered paper and pencil version of scales, while those of the third organization were administered a computerized version. The findings of the study supported the measurement equivalence of the Supervisor and Coworker scales across administration media.

Similarly, Puhan et al. (2005) evaluated the comparability of two versions of a teacher certification test (reading, writing, and Mathematics): a paper and pencil test and computer-based test. 7308 examinees participated in the study. The results of the study found no significant differences between the two versions.

Karadenis (2009) carried out an experimental study to determine the impacts of paper-based, web-based and mobile-based assessment on the achievement of the students in the internet assisted instruction. 39 students participated in the study (20 in the experimental group and 18 in the control group). He used a test to measure the students' achievement. The results showed that there was no significant difference between the achievement level of the students who took the three different modes. In addition, the students' perceptions were positive toward web and mobile based testing.

# 4. Methodology

This research follows a descriptive approach where a survey was used to collect data and statistical methods such as averages and frequencies were used.

## *4.1.* Participants

Fifty-three EFL student teachers took part in this study. They were enrolled in a program called "General Diploma in Education". This program lasts for one year and after completing it successfully, students will be eligible for teaching the English language in schools. The program takes place in the College of Education, King Khalid University (KKU). KKU is located in the southwest part of Saudi Arabia (For more information about the university, visit www.kku.edu.sa). It was ensured that all participants took part in e-exams at least once during their academic study.

## *4.2. Instrument*

The participants were asked to indicate their opinions towards e-exams on a five-point scale questionnaire. It consists of 36 items distributed on four categories: the e-exam design, the e-exam delivery, feedback and learning.

After revising the related literature, the first draft of the questionnaire was built. After that, It was given to five arbitrators who were specialized in this field to have their comments regarding the questionnaire items. The final draft of the questionnaire was modified according to the arbitrators suggestions. Cronbach's Alpha was calculated using SPSS. Its score was 0.91 which reflects high reliability.

### *4.3. Method of data analysis*

The participants were asked to indicate their opinions on a five-point scale questionnaire (strongly agree, agree, undecided, disagree and strongly disagree). Frequencies, percentages, arithmetic means and standard deviation were calculated to find how much the subjects agree or disagree with the tool statements and to get a judgment regarding their perceptions concerning e-exams. The statistical package for social sciences (SPSS) was used for data analysis. The judgments concerning agreements or disagreements in response to the questionnaire items depend on the average of mean score of each item. 7. Findings and Discussion

## 5. Findings and discussion

The objective of the current study is to investigate the views of EFL student teachers regarding e-exams. Four aspects of e-exams were explored; design, delivery, feedback and learning.

### *5.1. The e-exam design*

Items 1-6 address the e-exam design. Aspects such as its instructions, objectives and layout were investigated. As it can be seen in Table 1, all statements are rated as high. The clarity of the e-exam instructions obtained the highest mean score of (4.00), whereas the clarity of the e-exam objectives was the least (3.74).

***Table 1***

***The e-exam design***

| # | Statements | Percentage | | | | | M | SD | Rating |
|---|---|---|---|---|---|---|---|---|---|
| | | SA | A | N | D | SD | | | |
| 1 | The e-exam instruct-tions are clear to me. | 15 | 27 | 7 | 7.5 | | 4.00 | .855 | high |
| 2 | The e-exam objectives are clear to me. | 13.2 | 54.7 | 24.5 | 7.5 | | 3.74 | .788 | high |
| 3 | The e-exam layout is better than that of paper-based exams. | 26.4 | 20.8 | 26.4 | 22.6 | 3.8 | 3.43 | 1.217 | high |

| # | Statements | Percentage | | | | | M | SD | Rating |
|---|---|---|---|---|---|---|---|---|---|
| | | SA | A | N | D | SD | | | |
| 4 | The use of multimedia makes the e-exam more attractive. | 22.6 | 41.5 | 28.3 | 5.7 | 1.9 | 3.77 | .933 | high |
| 5 | The e-exam contains diverse questions. | 18.9 | 30.2 | 30.2 | 18.9 | 1.9 | 3.45 | 1.066 | high |
| 6 | The e-exam design meets my needs. | 20.8 | 26.4 | 37.7 | 15.1 | | 3.53 | .992 | high |

### *5.2. E-exam delivery*

The statements 7-21 discuss the process of completing the e-exam. Table 2 shows that almost all respondents were satisfied with the items in this category. 11 items were rated as high. Item 9 (e-exams save time and effort) was rated as very high since 52% of the participants strongly agreed with this statement. It obtained the highest mean score (4.30). Only two items (items 17&18) were rated as moderate.

***Table 2***

***E-exam delivery***

| # | Statements | Percentage | | | | | M | SD | Rating |
|---|---|---|---|---|---|---|---|---|---|
| | | SA | A | N | D | SD | | | |
| 7 | The e-exam is simple to complete. | 37.7 | 35.8 | 18.9 | 5.7 | 1.9 | 4.02 | .990 | high |
| 8 | I have the necessary technical skills to take e-exams. | 26.4 | 37.7 | 30.2 | 5.7 | | 3.85 | .886 | high |
| 9 | E-exams save time and effort. | 52.18 | 32.1 | 7.5 | 5.7 | | 4.30 | .911 | very high |
| 10 | E-exam timing is flexible. | 34 | 41.5 | 17 | 7.5 | | 4.02 | .909 | high |
| 11 | E-exams limit cheating. | 34 | 28.3 | 22.6 | 13.2 | 1.9 | 3.79 | 1.116 | high |

| # | Statements | Percentage | | | | | M | SD | Rating |
|---|---|---|---|---|---|---|---|---|---|
| | | SA | A | N | D | SD | | | |
| 12 | E-exam can be taken through different electronic channels. | 20.8 | 39.6 | 22.6 | 17 | | 3.64 | 1.002 | high |
| 13 | It is easy to navigate between questions in e-exams. | 32.1 | 30.2 | 20.8 | 13.2 | 3.8 | 3.74 | 1.163 | high |
| 14 | E-exams provide constant reminders of the time allotted for the exam. | 41.5 | 34 | 18.9 | 5.7 | | 4.11 | .913 | high |
| 15 | E-exam answers can easily be re-edited when mistakes occur. | 26.4 | 39.6 | 24.5 | 5.7 | 3.8 | 3.79 | 1.026 | high |
| 16 | I complete e-exams quickly. | 32.1 | 37.7 | 18.9 | 11.3 | | 3.91 | .986 | high |
| 17 | I wish to use e-exams in all courses. | 11.3 | 30.2 | 38.3 | 24.5 | 5.7 | 3.17 | 1.105 | moderate |
| 18 | The necessary infrastructure for completing e-exams is provided. | 9.4 | 34 | 30.2 | 24.5 | 1.9 | 3.25 | .998 | moderate |
| 19 | The interface of the E-learning management system (LMS) helps in completing e-exams. | 13.2 | 54.7 | 26.4 | 3.8 | | 3.74 | .812 | high |
| 20 | E-exams can be accessed easily. | 22.6 | 49.1 | 20.8 | 5.7 | 1.9 | 3.85 | .907 | high |
| 21 | E-exams can be delivered easily. | 39.6 | 37.7 | 15.1 | 7.5 | | 4.09 | .925 | high |

## *5.3. Feedback*

Items 22-26 explore the views of the EFL student teachers regarding e-exams feedback. As it can be seen in Table 3, all respondents' views regarding the feedback were positive. All statements were rated as high. A high percentage of participants (47%) strongly agree that instant feedback in e-exams reduces the exam anxiety.

***Table 3***
***Feedback***

| # | Statements | Percentage | | | | | M | SD | Rating |
|---|---|---|---|---|---|---|---|---|---|
| | | SA | A | N | D | SD | | | |
| 22 | E-exams provide instant feedback. | 22.6 | 39.6 | 26.4 | 11.3 | | 3.74 | .944 | high |
| 23 | Instant feedback reduces exam anxiety. | 47.2 | 20.8 | 17 | 15.1 | | 4.00 | 1.127 | high |
| 24 | E-exams provide an equal evaluation. | 43.4 | 30.2 | 18.9 | 3.8 | 3.8 | 4.06 | 1.064 | high |
| 25 | Feedback is clear and understandable. | 15.1 | 47.2 | 34 | 3.8 | | 3.74 | .763 | high |

## *5.4. Learning*

This category discusses how e-exams can enhance the learning process. Aspects such as motivation, academic achievement and confidence were explored. According to Table 4, all items rated as high except for items 30 & 31 as they were rated as moderate.

***Table 4***

***Learning***

| # | Statements | Percentage | | | | | M | SD | Rating |
|---|---|---|---|---|---|---|---|---|---|
| | | SA | A | N | D | SD | | | |
| 26 | E-exams increase motivation for learning. | 20.8 | 41.5 | 28.3 | 9.4 | | 3.74 | .902 | high |
| 27 | E-exams increase confidence between students and teachers. | 22.6 | 45.3 | 22.6 | 9.4 | | 3.81 | .900 | high |
| 28 | E-exams reduce exam anxiety. | 26.4 | 39.6 | 15.1 | 13.2 | 5.7 | 3.68 | 1.173 | high |
| 29 | E-exams increase the freedom to express thoughts. | 9.4 | 26.4 | 34.1 | 18.9 | 13.2 | 3.00 | 1.177 | moderate |
| 30 | My grades on exams are better than on paper-based exams. | 15.1 | 30.2 | 34 | 13.2 | 7.5 | 3.32 | 1.123 | moderate |
| 31 | E-exams improve my academic performance. | 18.9 | 34 | 32.1 | 13.2 | 1.9 | 3.55 | 1.011 | high |
| 32 | E-exams help improve understanding of exam content. | 5.7 | 49.1 | 28.3 | 17 | | 3.43 | .844 | high |
| 33 | E-exams increase my self-confidence. | 28.3 | 43.4 | 20.8 | 5.7 | 1.9 | 3.91 | .946 | high |
| 34 | E-exams improve my computer skills. | 35.8 | 43.4 | 15.1 | 5.7 | | 4.09 | .861 | high |
| 35 | E-exams suit my academic major. | 28.3 | 34 | 26.4 | 7.5 | 3.8 | 3.75 | 1.072 | high |
| 36 | E-exams contribute to the continuity of evaluation. | 34 | 39.6 | 20.8 | 5.7 | | 4.02 | .888 | high |

## 6. Conclusion

The current study aimed at exploring EFL student teachers perceptions regarding e-exams. They were asked to indicate their opinions on a five-point Likert scale. A questionnaire of 36 items was used for this purpose. The study results showed that the participants have very positive views regarding e-exams. The overall average mean score is (3.75). According to Table 1, this is considered as high. Of the four aspects that were explored, feedback obtained the highest mean score (3.9), followed by e-exam delivery (3.8). The learning aspect obtained a mean score of 3.66 where as the e-exam design obtained the least mean score (3.65).The study results support the findings of some previous studies (e.g., Jamil and Shami (2012), Hillier (2014) &Karadenis (2009)) which found positive perceptions towards electronic exams although some other studies (e.g. Yaman and Cagitaly (2010), Akdemir and Oguz (2008) &Puhan et al. (2005)) found no significant differences between traditional exams and electronic exams.

Based on the study findings, it is recommended that e-exams should be given much more emphasis since most participants' views were positive regarding the e-exams. Therefore, it is recommended that e-exams should be applied to a wide range of academic courses. However, these views are limited to students. Therefore, it is highly recommended that future research should consult the teaching staff views regarding such exams.

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