

## Students' Perceptions of E-Assessment at Saudi Electronic University

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### ABSTRACT

This study explored students' perceptions of E-assessment at Saudi Electronic University. The university recently implemented this mode of assessment in the learning management system it uses. Therefore it is important to examine the students' perceptions of this mode at the university level. The results were encouraging. Students had positive perceptions of e-assessment and valued its features such as immediate feedback and unbiased grading.

### INTRODUCTION

Assessment is a core element in the educational system to obtain information about the extent the learning outcome has reached. Valid and reliable assessment improves the quality of learning, teaching and academic programs (Dermo, 2009, Rastgoo, Namvar, & Iran, 2010) and is important for learners, teachers, and educational institutions. Students need to know whether they are approaching the goals set up for them. Confirming students' knowledge is the educational organization's task (Rowe, 2004), which cannot be done without assessment which validates that the students have learned. Students learn better when they know the learning objectives and the criteria used to measure achievement of these objectives.

Educators, too, need to know whether they are using appropriate teaching methods and approaches. One goal of assessment is to direct the instructor to the students' needs to improve the learning process (Rocco, 2007). Institutions need to provide evidence that they are doing what they are supposed to do. Not only students and their parents but other parties in society, such as benefactors, educational policy makers, and companies that offer jobs to graduates of these institutions, want to see this evidence. "If an institution claims to provide a service, they must prove to society that they do by some assessment mechanism" (Rowe, 2004, p. 2).

With increasing interest in e-learning and e-assessment, with more institutions providing it and more students taking it, consideration should be given to students' opinions about e-assessment. Without knowing their opinions, it is hard to offer e-assessment which will be a primary mode of assessment at Saudi Electronic University. E-assessment in this study refers to the use of technology to assess students' learning.

### LITERATURE

#### Student Role in E-assessment

Although the practice of assessment is different in online and face-to-face environments, "the principles of assessment do not change in an online environment" (Benson, 2003, p. 71). Ronles and Braathen (2002) described the change that occurs when moving to online learning: In the online environment, the student is responsible for his or her learning. He or she, for example, is required to read, understand, ask, answer, discuss, and explore the learning materials provided by the instructor. The instructor, as Ronles and Braathen stated, facilitates all these activities, and encourages communication and interaction among students and aids students in engaging with the technology. Chat rooms and email should compensate for the absence of a warm body providing the guidance that keeps students from getting lost in the online world (Ronles & Braathen).

Liang and Creasy (2004) stated that the assessment methods used in an online environment should reflect the nature of the online learning that gives the learner more responsibility for his or her learning. It should be designed in a way that allows students to demonstrate their capability in solving real-life problems, and should reflect aspects that have changed from traditional teaching, such as self-directed learner (or learner autonomy), teacher as facilitator of learning, and writing communication.

Through the traditional assessment lens, on the other hand, the learner as the recipient of knowledge and learning is assessed by measuring recall of facts and comprehension skills (Robles & Braathen, 2002) which does not allow the higher levels to take place. Haken (2006) stated that assessing students' knowledge is important but not

sufficient. The students' ability to transform learning from memorizing facts to a wide model that reveals the academic programs outcome is more important (Buzzetto-More & Alade, 2006).

The constructivism approach adopted by educators enables students to produce their learning. This approach can be applied where some of the assessment responsibility is taken from the teacher and given to the learners (McLoughlin & Luca, 2001). Thus, learners become responsible not only for building their knowledge and learning but also for assessing that learning by being involved in the assessment activities and receiving feedback. The e-assessment supports such an approach that is appropriate for this generation of learners who want to participate in making the decisions of their learning experience (Prensky, 2005). Students' perception of assessment has also changed and they now see assessment as part of their learning, which can be practiced by themselves or their peers (Rastgoo et al., 2010).

#### Educator Role in E-assessment

In order to achieve a meaningful assessment, educators should predetermine the purpose of the assessment, its desired outcome and the criteria to be measured (Gaytan & McEwen, 2007). Informing the students about the objective of the course helps them to learn better. Educators also should modify their teaching methods in order to provide assessments that match the level of desired goals (Liang & Creasy, 2004). Online educators should adopt assessment methods that allow their students to demonstrate achievement of the course objectives (Ronles & Braathen, 2002). Because teaching methods changed when the institution moved to an online environment, different assessment methods should be adopted as well (Liang & Creasy, 2004). Instructors are now changing their perceptions and perceived projects, weekly assignments, self-assessment, portfolios, timed quizzes, and discussion boards as effective assessment methods (Gaytan & McEwen, 2007).

#### Advantages of E-assessment

The use of e-assessment brought many advantages for students, educators and educational institutions. For example, e-assessment allows for evaluating important life-skills, for improving the reliability of scoring and accordingly improving the quality of the test itself, and helps to avoid the drawbacks of the traditional paper-based assessment system - such as the time required for grading (Ridgway, McCusker & Pead, 2004). E-assessment also motivates students to participate, giving feedback to a large number of students, saving marking time (Dermo, 2009), provides high quality data for teachers and administrators (Hoover, 2007), as well as reducing the printing cost (Rastgoo et al., 2010). E-assessment increases objectivity in grading because the computer grades the exams regardless of students' names, race, culture, etc. (Ozden, Erturk & Sanli, 2004). For students, e-assessment's advantages are: It is flexible in terms of time and place and provides immediate feedback (Hoover, 2007) which fosters self-assessment for students (Sorensen, 2013). E-assessment enables personalized evaluation, is low cost, motivates students to learn, encourages skills practicing (Ozden et al., 2004), and provides students with a chance to participate in problem-solving that promotes deep learning (Sorensen, 2013). E-assessment aggregates students' scores, enabling educators to see their students' learning progress and facilitating immediately available management of data (Hamilton & Shoen, 2005).

#### Disadvantages of E-assessment

Despite its many advantages, e-assessment has some disadvantages that might hinder its use. For example, e-assessment is time-consuming in terms of preparing tests, requires technology, and lacks control of tests (Rastgoo et al., 2010). E-assessments give the instructors less control over the exam setting, which makes cheating easier for students. Rowe (2004), in his exploratory study to reveal problems of dishonesty in online exams, discussed the three most serious problems in online assessment. First, students can have answers to the exam prior to taking it. As it is hard to ensure that all students are taking the exam at the same time, so students who take the exam first can give other students the questions.

The second problem that Rowe (2004) mentioned was that students can retake the assessment many times, giving them time to review the questions and respond correctly. Rowe discussed different ways that students can manipulate their instructors into providing them with another chance to take the exam such as crashing the server or breaking the power, then claiming that they lost their answers. Students might even change the system clock to tricking the system into treating them as new exam takers.

The third problem discussed by Rowe (2004) was illegal help during the exam, such as exchanging emails or hiring someone else to take the exam. As Rowe stated, students know computers better than their teachers do so it is easy for them to use computers for cheating. Therefore, security should be a concern for instructors in e-assessment. Perrin and Mayhew (2000) for example, found that the assessment items were printed and shared

among students. Restrictions on assessment, such as blocking students from viewing the questions after submitting the answers or limiting the time to ensure that all students are taking the test at the same time, will restrict the effectiveness of the test as an assessment tool (Ronles & Braathen, 2002).

Some literature suggests that online instructors have the option of combining e-exams with traditional exams to avoid the problem of dishonesty in e-assessment. Rowe (2004) criticized this combination, saying it reduces cheating but does not eliminate online cheating. Furthermore, some students can be nervous in the traditional setting and so do better in online testing. Bork (2001) suggested that educators use ongoing tests so cheating won't be cost effective for students. However, this tactic requires significant work, prevents students from studying at their own pace, implies that they are not trusted to learn without testing, and focuses on short-term learning (Rowe, 2004).

Using a pool of questions where each student gets different, randomly selected questions was another suggestion for overcoming the problem of dishonesty in e-assessment. However, this solution requires time and effort to generate a pool of questions, and will not ensure that each student gets different questions because there will always be overlapping.

#### Related Work

Dermo (2009) conducted a study to examine the perceptions of students toward e-assessment. Dermo focused especially on the following aspects of e-assessment: effectiveness, validity, security, practicality, reliability, and pedagogy. Dermo found that students hold positive feelings in general and are concerned only about the unfairness of question banking where each student has different questions. Despite the fact that educators can use validity evidence techniques to make question banking relatively fair, students in Dermo's study believed this method would not ensure that all students were exposed to the same level of difficulty.

Rudland, Schwartz and Ali (2011) directed a study to determine the acceptability to students of the computer-based exam. The students in their study accepted that format of testing and thought the flexibility and convenience of taking the exam anywhere and anytime, coupled with immediate feedback, were the most important benefits of such form. However, they considered the possibility of cheating as problematic.

Sorensen (2013) conducted a study to investigate the students' perception of e-assessment. He found that students were engaged in the e-assessment process and believed that it added value to their learning.

Hassanien, Al-Hayani, Abu-Kamer, and Almazrooa (2013) surveyed students to collect information about their perceptions of computer-based assessment as a summative assessment. They found that students were highly satisfied and believed that the advantages outweighed the disadvantages

Jawaid, Moosa, Jaleel and Ashraf (2014) also conducted a study to investigate the students' perceptions of computer-based assessment. They found that students have a good attitude toward computer-based assessment and valued features such as the use of multimedia, the automatic grading, and the personalized feedback.

Bandele, Oluwatayo, and Omodara (2015) investigated university undergraduates' opinions on the use of electronic examination. They found students favored the use of e-examinations. They also found significant variations in opinions across gender in favor of females.

Gotlib, Panczyk, Gębski, Zarzeka, Iwanow, Dąbrowski, and Malczyk (2015) compared the opinions of students who participated in the electronic examinations with students who had not. They found that participation in e-examinations has no impact on the students' perceptions of them.

Chia (2016) investigated the students and teachers' perception toward the implementation of information technologies to facilitate the summative assessment. The study found that students as well as teachers hold positive attitude toward the use of technologies in assessment and they preferred it to the traditional form of assessment.

Petrisor, Marusteri, Simpalean, Carasca and Ghiga (2016) examined the students' acceptance of online evaluation system. They found that students preferred the online evaluation system over the paper and pencil examination. Participants in their study believed that online assessment can assess the knowledge level of learning and their objectives in term of grading.

## THE PURPOSE OF THE STUDY

The study aims to investigate students' perceptions of e-assessment. It seeks to answer the following questions:

1. What are the students' perceptions of the use of e-assessment used at the Saudi Electronic University
2. Does participation in e-assessment influence students' perceptions of e-assessment?

## METHODOLOGY

### Research Design

This is an exploratory study meant to reveal the Saudi Electronic University students' perceptions of e-assessment.

### Sample

Only undergraduate students from Saudi Electronic University who had experienced online assessment were considered to be potential participants for this study. By the academic year 2015-2016, around 80 students from the university had experienced e-assessment because it was implemented only recently. The online survey was sent to all 80 students by email. Only 44 responded, which made a response rate =55%.

### Instrument and data collection

Data were collected by a self-designed online survey. The survey contained 15 items to collect information about the students' opinions of e-assessment. Each item was rated on a four-point scale: strongly agree= 4 to strongly disagree = 1 and there was one item to collect information about how many e-assessments a student had experienced. That had two options: 1= 3 times or fewer, 2= more than 3.

### Validity and reliability

Validity was ensured by obtaining feedback from experts from the evaluation and measurement department of the university. The instrument was modified according to their suggestions. The instrument was then piloted with 20 students from another institution to ensure its clarity and reliability.

## RESULTS

Collected data were analyzed using means, standard deviation and independent t-test. Cronbach alpha was calculated and was = .91 which was a high value.

### Question 1:

To answer the first question, what are the students' perceptions toward the use of e-assessment utilized at the Saudi Electronic University, means and standard deviation were used as presented in Table 1. The assumption of Bandele et al. (2015) was used for analysis: means 1.00 – 1.49 (very unfavorable), 1.50-2.49 (unfavorable), 2.50-3.49 (favorable) and 3.50- 4.00 (very favorable).

Almost all items ranged from favorable to very favorable for the participants. Immediate feedback gained the highest mean, followed by unbiased grading. The only item that fell into the unfavorable category was "Online assessment is appropriate for all subjects".

### Question 2:

To answer the second questions: Does participation in e-assessment influence students' perceptions of e-assessment? An independent t-test was performed to compare the perceptions of students who have practiced the e-assessment fewer than three times with those who had it more often. The result showed no statistically significant difference between the two groups  $t(42) = .01, p > 0.5$ . This indicated that the number of times a student practiced the e-assessment had no impact on the student's perception.

## DISCUSSION

The study investigated the students' perceptions of e-assessment. The results show that the advantage of e-assessment revealed by the literature has also gained favor with Saudi Electronic University students who participated in this study. They appreciated the immediate feedback, unbiased grading, enhanced self-learning, etc. Participants favored using e-assessment as the mean scores ranged from 2.3 to 3.8. This result paralleled with other studies that found that undergraduate students favored the use of e-exam, preferring its use over the traditional exam, and holding positive feelings in general toward the e-assessment (Dermo, 2009; Rudland, et al., 2011; Alabi et al., 2012; Sorensen, 2013; Hassanien et al., 2013; Jawaid et al., 2014; Bandele, et al. 2015)

The highest mean was for the item: “Online assessment gives me immediate feedback about my performance” which has been shown to be an important advantage of the e-assessment, garnering 100% agreement from the students (Ridgway et al., 2004; Hoover, 2007; Dermo, 2009; Sorensen, 2013). The second item that gained a high mean was “Online assessment provides a chance of unbiased grading” which had also been found to be an advantage for e-assessment (Ridgway et al., 2004; Ozden et al., 2004). Participants in this study believed that the e-assessment does not require any advance skills nor does it facilitate cheating.

The results showed that participation in e-assessment has no impact on the students’ perceptions of e-assessment which is consistent with Gotlib et al. (2015) finding.

## CONCLUSION

This study aimed to explore the attitude toward the use of e-assessment of undergraduate Saudi Electronic University students. Results revealed that they hold a positive attitude, valued the immediate feedback and believed that this would benefit their learning. They also valued that e- assessment reduced bias in grading exams. From the participants’ point of view, e-assessment does not require any advance skills nor does it facilitate cheating.

## REFERENCES

- Alabi, A. T.; Issa, A. O. & Oyekunle, R. A. (2012). The use of computer-based testing method for the conduct of examination at the University of Ilorin. *International Journal of Learning and Development*, 2(3): 68—80. Bartram
- Bande, S. O., Oluwatayo, J. A., & Omodara, M. F. (2015). Opinions of Undergraduates on the Use of Electronic Examination in a Nigerian University. *Mediterranean Journal of Social Sciences*, 6(2 S1), 75.
- Benson, A. D. (2003). Assessing participant learning in online environments. *New Directions for Adult and Continuing Education*, 100, 69-78
- Bork, A. (2001). What is needed for effective teaching on the Internet? *Educational Technology and Society*, 4(3), 139-143.
- Buzzetto-More, N. & Alade, A. (2006). Best practices in e-assessment. *Journal of Information Technology Education*, 5, 251-269.
- Chia, S. P. C. (2016). An investigation into student and teacher perceptions of, and attitudes towards, the use of information communications technologies to support digital forms of summative performance assessment in the applied information technology and engineering studies courses in Western Australia
- Dermo, J. (2009). e-Assessment and the student learning experience: A survey of student perceptions of e-assessment. *British Journal of Educational Technology*, 40 (2), 203-214.
- Gaytan J., & McEwen, B. C. (2007). Effective online instructional and assessment strategies, *The American Journal of Distance Education*, 21 (3), 117
- Gotlib, J., Panczyk, M., GęBSKI, P. I. O. T. R., Zarzeka, A., Iwanow, L., Dąbrowski, F. & Malczyk, M. (2015). Comparative analysis of opinions of Warsaw Medical University students on electronic examinations and final tests by their participation in this form of knowledge assessment—preliminary report. *Polish Journal of Public Health*, 125(3), 153-158.
- Haken, M. (2006). Closing the loop-learning from assessment. Presentation made at the University of Maryland Eastern Shore Assessment Workshop. Princess Anne: MD.
- Hamilton, D. & Shoen, E. (2005). Same song, second verse: Evaluation and improvement of an established assessment program. *Assessment of Student Learning in Business Schools: Best Practices Each Step of the Way*. 138-153.
- Hassanien, M. A., Al-Hayani, A., Abu-Kamer, R., & Almazrooa, A. (2013). A six step approach for developing computer based assessment in medical education. *Medical teacher*, 35(sup1), S15-S19.
- Hoover, J. (2007). Let Your Data Do the Talking. *Principal Leadership (Middle Sch Ed)*, 8 (1).
- Jawaid, M., Moosa, F. A., Jaleel, F., & Ashraf, J. (2014). Computer based assessment (CBA): perception of residents at Dow University of Health Sciences. *Pakistan journal of medical sciences*, 30(4), 688.
- Liang, X., & Creasy, K. (2004). Classroom assessment in Web-based instructional environment: Instructors’ experience. *Practical Assessment, Research & Evaluation*, 9 (7).
- McLoughlin, C. & Luca, J. (2001). Quality in online delivery: What does it mean for assessment in e-learning environments? In Meeting at the crossroads. Proceedings of the Annual Conference of the Australasian Society for Computer in learning in Tertiary Education (ASCI-LITE 2001) (18th), Melbourne, Australia.
- Ozden, Y., Erturk, I. & Sanli, R.(2004). Students’ perceptions of online assessment: A case study. *Journal of Distance Education*, 19 (2), 77-92.



Petrisor, M., Marusteri, M., Simpalean, D., Carasca, E., & Ghiga, D. (2016). Medical Students' Acceptance of Online Assessment Systems. *Acta Medica Marisiensis*, 62(1), 30-32.

Perrin, K. M., & Mayhew, D. (2000). The reality of designing and implementing an internet-based course. *Learning Administration*, 3 (4).

Prensky, M. (2005). Listen to the natives. *Educational Leadership* 63 (4), 8-13.

Rastgoo, A., Namvar, Y. & Iran, A. (2010). Assessment Approach in virtual learning. *Turkish Online Journal of Distance Education TOJDE*, 11 (1). ISSN 1302-6488

Ridgway, J, McCusker, S., & Pead, D (2004). Literature review of e-assessment, NESTA Futurelab Series Report 10, Bristol: NESTA Futurelab.

Robles, M., & Braathen, S. (2002). Online assessment techniques. *The Delta Pi Epsilon Journal*, 44 (1), 39–49.

Rocco, S. (2007). Online assessment and evaluation. *New Directions for Adult and Continuing Education* (113), 75-86

Rowe, N. C. (2004). Cheating in online student assessment: Beyond plagiarism. *On-line Journal of Distance Learning Administration*, 7(2).

Rudland, J. R., Schwartz, P., & Ali, A. (2011). Moving a formative test from a paper-based to a computer-based format. A student viewpoint. *Medical teacher*, 33(9), 738-743.

Sorensen, E. (2013). Implementation and student perceptions of e-assessment in a Chemical Engineering module. *European Journal of Engineering Education*, 38(2), 172-185.

**Table 1:** Frequencies, means and standard deviations for the survey items.

	Items	Strongly agree	Agree	Disagree	Strongly disagree	Mean	SD	
1	Online assessment enhances quality aspect of my learning	25 56.8%	14 31.8%	2 4.5%	3 6.8%	3.4	0.87	Favorable
2	Online assessment gives me immediate feedback about my performance	35 79.5%	9 20.5%	0	0	3.8	0.58	Very favorable
3	Online assessment provides faculty with feedback to improve learning	27 61.4%	11 25%	6 13.7%	0	3.5	0.79	Very favorable
4	Online assessment provides a unbiased grading	30 68.2%	13 29.5%	1 2.3%	0	3.6	0.65	Very favorable
5	Online assessment helps in improving the quality of assessment in higher education	20 45.5%	20 45.5%	3 6.8%	1 2.3%	3.3	0.71	Favorable
6	Online assessment enhances self-learning	26 59.1%	12 27.3%	4 9.1%	2 4.5%	3.4	0.84	Favorable
7	Online assessment reduces exam stress	27 61.4%	9 20.5%	6 13.6%	2 4.5%	3.4	0.89	Favorable
8	Online assessment improves my technical skills	25 56.8%	12 27.3%	6 13.6%	1 2.3%	3.4	0.81	Favorable
9	I prefer online assessment rather than the traditional one	29 65.9%	6 13.6%	5 11.3%	4 9.1%	3.4	1.01	Favorable
10	Online assessment is appropriate for all subjects	9 20.5%	9 20.5%	14 31.8%	12 27.3%	2.3	1.1	Unfavorable
11	Online assessment is appropriate for all students	10 22.7%	13 29.5%	10 22.7%	11 25%	2.5	1.0	Favorable
12	Online assessment does not require	13 29.5%	18 40.9%	6 13.6%	7 15.9%	2.8	1.0	Favorable

	advance technical skills from students							
13	Online assessment promotes applying a variety of questions	12 27.3%	15 34.1%	9 20.5%	8 18.2%	2.7	1.0	Favorable
14	Online assessment does not facilitate cheating	21 47.7%	15 34.1%	2 4.5%	6 13.6%	3.2	1.0	Favorable
15	Reading from a screen does not make using online assessment difficult	14 31.8%	17 38.6%	5 11.4%	8 18.2%	2.8	1.1	Favorable