Comparison of Item analysis of Online and Offline courses in College of Medicine, Najran University

MOHAMMED AYED HUNEIF
Corresponding Author: Dr. Mohammed Ayed Huneif , Department of Pediatrics, College of Medicine, Najran University, Najran , Saudi Arabia

ABSTRACT

Today, information technology is everywhere and accessible to almost all. In this age of information technology, medical education is now faced with novel challenges. The online healthcare information boom, on the one hand constantly challenges medical students to update and extend their current body of knowledge quickly. The fast expansion of higher education online learning has also benefited from the possible cost savings for unlimited learners. Passively arranged into an experimental or control group were the undergraduates who took part in the included experiments. The main of this study is to compare online and offline exams.

Methods: Data was collected from the examination department of college of Medicine, Najran University. Data was entered in the SPSS ver.20 for analysis. Descriptive and inferential statistics was obtained. (Mean, scores , frequencies and percentages), T test and chi-square tests were used to find out the significant differences and degree of associations between the scores and item analysis parameters.

Results: Out of 6 tests, we did not observe the significant differences among the online and offline pass rat except Exam F (P<0.01), Easy questions are significantly increased in online exams.

Conclusion: Online MCQs are seems to be more easier than paper-based assessments, but Authorized / validated Online MCQs would be more precise.

Key words: online, manual, exams, tests, item analysis

INTRODUCTION

Today, information technology is everywhere and accessible to almost all. In this age of information technology, medical education is now faced with novel challenges. The online healthcare information boom, on the one hand constantly challenges medical students to update and extend their current body of knowledge quickly.[1]

This paper presents the results of comparative study between paper based and online exams conducted on a different courses medical college of Najran University. Inside the usual classroom, the paper exams were given. Locations with standard test configuration: spacing the examination properly Students and two forms of the question paper to include Reduce/Eliminate instances of cheating.[2] During designated labs, performed inside computer lab rooms Hours inside the room with the researcher present Examination recording and supervising. The names of the students Before taking both forms of exams using their own, they were confirmed college Cards of Identity.[3]

The fast expansion of higher education online learning has also benefited from the possible cost savings for unlimited learners. Passively arranged into an experimental or control group were the undergraduates who took part in the included experiments. [4]

The impact of online learning and face-to-face teaching on the achievement and success of students were estimated in a recent study conducted at a major for-profit university with a graduate enrollment of more than 100,000. As a consequence, students earned lower grades for both the online course and the corresponding courses. Therefore after detailed thinking of human economic practices in the real world, the option of teaching method should also be made. [5-7]

A number of advantages over conventional paper-based tests have been identified for computer-based assessments both in terms of computer support for question creation, reduced costs of test distribution and administration, reduced costs of distributing graders' responses, and potential automated grading support

In order to preserve the benefits of online learning, universities are increasingly using online tests as an assessment and evaluation tool. For example, 12% of one of the European University exams in 2012 were conducted through online means. [8-12]

The University of Tampere in Finland has been carrying out online tests for proficiency and retake examinations for many years, and in 2014 started to use the university-wide method "EXAM" [13]. The Saudi Electronic University, which recently introduced online assessments in the sense of their learning management system, presented another example of an online examination application [14].

Computer-based e-exams without internet connection can be introduced. For learners, teachers, and organizations, all types of these assessments have both advantages and disadvantages.

Time reduction, test protection, secure data storage, fast outcomes, cost efficiency, paper saving, and automated record keeping for item analysis and learning analytics are advantages. In comparison to these benefits, technical difficulties, assistance needed from external resources and the feelings of exhaustion of the examinees due to the use of technological tools are drawbacks [15-16]

The classification of online learning is synchronous or asynchronous. Synchronous technology enables the teacher and the students to communicate live (e.g. audio conferencing, video conferencing, online chats, etc whereas asynchronous technology requires substantial gaps between instruction and reception (e.g. e-mail, previous video recording, discussion boards, etc.[7-20]

In This pandemic era (Covid 19) in all over the world now a days, All education institutions adopting E- learning

methods for coaching and teaching further exams and assessment are also moving towards the E-Exams and E-Assessments. In Saudi Arabia also government instructed the institutors to adopt the online teaching system. On Saudi Arabian stated that the respondents found that online of education was more versatile than conventional classes, the technology used effective and efficient communication tools on online platforms, and thus faced no difficulties reaching their students, as Daniel previously reported. Many universities in Saudi Arabia had already implemented an online learning approach using the Blackboard learning management framework along with traditional dedicated face-to-face seminars, both entirely online learning and hybrid learning were added.[20-24]

METHODS

Data was collected from the examination department of college of Medicine, Najran University. Data was entered in the SPSS ver.20 for analysis. Descriptive and inferential statistics was obtained . (Mean , scores , frequencies and percentages), T test and chi-square tests were used to find out the significant differences and degree of associations between the scores and item analysis parameters. Three basic science courses, and three Clinical sciences course were included in the study. The exam was conducted in the second semester of 2019 (online) &2018 (offline) . Identity of the exams remain hidden due to the policy of the college.

RESULTS

Table 1 depicted that we did not observe the significant differences among the online and offline pass rat except Exam F (P<0.01)

	Pass rate (Manual Exams)	Pass rate (online Exams)	
	%	%	p- value
Basic Science courses			
Exam A	88%	95%	N.S
Exam B	92%	98%	N.S
Exam C	92%	97%	N.S
Clinical Courses			
Exam D	84%	88%	N.S
Exam E	82%	88%	N.S
Exam F	72%	86%	P<0.01

Table 2 depicted that we have observed significant increase in the Easy questions except Exam C we have observed significant increase in easy questions in all tests.

Difficulty Index									
	Manual Exams			Online Exams			p-values		
Courses	Easy Questions	Moderate Questions	Difficult Questions	Easy Questions	Moderate Questions	Difficult Questions	P -value easy questions	P -value Moderate questions	P -value Difficult questions
Exam A	20%	75%	5%	40%	58%	2%	P<0.05	P<0.05	N.S
Exam B	30%	64%	6%	80%	15%	5%	P<0.05	P<0.05	N.S
Exam C	45%	54%	1%	40%	50%	10%	N.S	N.S	P<0.05
Exam D	25%	35%	40%	70%	28%	2%	P<0.05	N.S	P<0.05
Exam E	22%	45%	33%	55%	44%	1%	P<0.05	N.S	P<0.05
Exam F	41%	25%	34%	65%	25%	10%	P<0.05	P<0.05	P<0.05

Table 3 depicted that we have observed significant changes in fair questions in all the courses, further except Exam A and F we have observed significant differences in god questions as well.

	Discrimination Index								
courses	Manual Exams			Online Exams			p-values	p-values	p-values
	Poor Questions	Fair Questions	Good Questions	Poor Questions	Fair Questions	Good Questions	Poor questions	Fair questions	Good questions
Exam A	20%	14%	66.00%	15%	25%	60%	N.S	P<0.05	N.S
Exam B	40%	16%	44.00%	5%	35%	60%	P<0.05	P<0.05	P<0.05
Exam C	25%	14%	61.00%	2%	45%	53%	P<0.05	P<0.05	P<0.05
Exam D	18%	18%	64.00%	11%	38%	51%	P<0.05	P<0.05	P<0.05
Exam E	16%	12%	72.00%	12%	36%	52%	N.S	P<0.05	P<0.05
Exam F	12%	19%	69.00%	8%	29%	63%	P <	P<0.05	N.S

Table 04 depicted significant increase in average scores of online exams.

Courses	Average Reliability of the Exams (Manual)	Average Reliability of the Exams (Online)	Average score (Manual)	Average score (Online)	P-value (Reliability)	P-value (Average Score)
Courses						
Exam A	0.84	0.86	80.1	95.1	N.S	P<0.05
Exam B	0.78	0.94	76.2	92.5	P<0.05	P<0.05
Exam C	0.89	0.84	77.2	98.6	N.S	P<0.05
Exam D	0.94	0.92	74.2	94.5	N.S	P<0.05
Exam E	0.78	0.79	74.5	92.5	N.S	P<0.05
Exam F	0.79	0.75	85.4	93.4	N.S	P<0.05

DISCUSSION

The aim of the analysis was to assess whether there was a substantial difference between the median values of online test results and conventional paper-based tests. Tests used in the Data Modeling and Process Modeling course contained objective question forms, while those for the Information Management course consisted only of objective questions. Descriptive statistical analysis was conducted for all six courses. We have been using the Blackboard

method in our college for e-learning and Evaluation; it was well trained to be used by students and faculty. In the scoring of the exams, the Blackboard platform is precise as Computers eradicate human error; thus it guarantees The reliability of the online tests, but Blackboard. MCQs and/or short-answer systems are only applicable to Questions One of the psychometric criteria is reliability. The MCQs test guarantees the accuracy of the findings. Previous research, including one study published in Saudi Arabia, it was noted that the findings of online research and paper-based testing were Not markedly different. The main finding our stated that we have a significant increase in easy questions and average scores also increases.[25-26]

According to one study in which author analyzed the effect on student success of paper-based, web-based and mobile-based assessments. A total of 38 students were tested for three weeks. Substantial variations were found.[27]

Among the results obtained by the students in the second week, but not in the first week. The authors thought that, due to ease of use, students had a good attitude towards web-based and mobile-based evaluation Instant and detailed reviews. [28-29]

In the classroom, both online and paper-based experiments under controlled conditions were resolved. In order to solve the conventional test, students had 60 minutes, and all questions had to be answered at this time. While online tests had more questions than paper-based tests, due to different types of questions, less time was required to solve them.[30-32]

We feel that it is best to use a combination of online assessments and other knowledge evaluation methods with regard to the test development process.

CONCLUSION

The effect of the drastic shift in the assessment of exams because of the consequence of the COVID-19 pandemic. Online MCQs are seems to be more easier than paper-based assessments, but Authorized / validated Online MCQs would be more precise greater ability to discriminate if prepared to assess for comprehension and application of knowledge not simple recall questions and exams done in Computer labs to supervised students and to over come technical difficulties . In online assessments, the overall performance of the student in theoretical and practical tests has been significantly improved. Further if online exams will be conducted in the computer labs of the college under the supervisions of the teachers and I.T staff it will proof to be more validated exam and enhance the quality of assessment

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