



## Original Research Article

## Perception of new medical graduates on e-assessments conducted through Microsoft Team's portal during the covid pandemic

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## ABSTRACT

**Background:** The effect of covid pandemic has left a vacuum effecting every field of life, with lots of question, especially on group meeting that including teaching at all levels. The impact of web-based assessment practices on the performance of undergraduate medical students is not widely studied. The modern digital global world provides e-assessment, contributing a crucial role and has powerful effects on student learning and their outcomes.<sup>1-3</sup> Designed e-assessments may even provide a scale to measure the progress and the effects on the outcome of institutions, including a tool to target the attention of students to focus on the learning outcomes. As e-learning includes various modes of communication both visual and audio in different formats i.e, animation, visual streaming; it motivates many e-learning processes, as it can be done in or out of the classroom, and has been proved an open-source web-based learning management system (LMS), managing the tools required for collaboration, communication, evaluation, and assessment for higher education. Online quizzes are methods for graded assessment that offers students an opportunity to gauge their level of performance on a topic including feedback to the faculty to make necessary changes in the ongoing curriculum.

**Materials and Methods:** 100 First-year medical students were registered and the dates for assessment and conducting of survey before and after was fixed. Thirty MCQ and SEQ from various sections of human physiology were preloaded on the Microsoft team's portal, from the topics covered during pandemic live on net and the students used their devices to answer the questions within the stipulated time. The results were automatically loaded at the end of the assessment. Pre- and post-test survey were conducted to investigate the significance of the E-assessment.

**Results:** The students responded that the e-assessment was easy to assess, unique as they received immediate feedback, customized, and flexible. There was a significant difference in the post-test survey.

**Discussion:** Technology has created new methods of assessment for today's generation of students, and these advances are here to stay.

**Conclusion:** It is possible to conduct online examinations in medical school regularly. The e learning can enhance student interests and allows immediate feedback. Since e learning is not well established in India, we hope to create awareness and change the outlook of medical students in the online teaching learning and assessment program.

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### 1. Introduction

Assessments are designed to provide students with relevant feedback early in the learning process to support the achievement of learning outcomes. Usually done as

formative or summative assessments both having “higher-stakes” to grade students at the end of a study period, by providing feedback to students on their performance.<sup>4</sup> In class, paper-based assessments have limitations, as they don't provide individual feedback. Paper-based assessment is time-consuming and may not be feasible for large classes as well.<sup>5</sup> Online e-assessment is a modern tool,

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is a time-effective alternative and providing the educators timely feedback to large groups of students without creating workload on the institutional resources. It is also advantageous for students by providing more flexibility in terms of transferring skills and knowledge, as it is neither time-bound nor space-bound, in or out of the classroom, with a feedback by providing links to learning resources, it motivates further study.<sup>5,6</sup> Early adopters include the University of Cambridge Local Examinations Syndicate; conducted its first major test around November 2000. The letter “e” is “electronic,” which will ultimately affect in future all educational activities whether online or offline via a network using computers or any other device.<sup>7</sup> Advantages being an independent exploration of a complex phenomenon, easy access, and relatively low cost of production. Disadvantages like limited physical interaction, limited fidelity quoted in the previous study.<sup>8</sup> The modern global village provides web facilities i.e, ILIAS, which is open-source software that is published under the General Public License and is free of charge for various institutions and organizations worldwide. Assessing tools in computer-based training usually comes in the form of multiple-choice questions, drag-and-drop, radio button, simulation, or other interactive means. The grades are easily recorded via online software, providing immediate end-user feedback and completion status.<sup>9–11</sup> The main barriers of e-assessment are the requirement for a change, poorly designed packages, inadequate technology, lack of skills, need for a component of face-to-face teaching, time factor, computer anxiety. There is a range of solutions to overcome these barriers i.e, standardization, strategies, funding, integration of e-learning into the curriculum, blended teaching, user-friendly packages, access to technology, skills training, support.<sup>12</sup> A comparison between traditional teacher-led lectures and e learning reveals equal effectiveness complementing each other and described as a blended learning strategy. Medical education should have the backing of e-learning i.e, digital libraries; have access to e-learning material and provision for peer review of resources. That provides research opportunities but also documents scholarship. This scenario will bring a revolution in education as individualized performance (adaptive learning), interaction with other learners (collaborative learning) and transformation role of educators and academicians.<sup>13</sup> Advantages of e-assessment include quick updating of content and knowledge, fast accessibility, personalized instruction, accountability, standardization of content;<sup>14–16</sup> and interaction of large groups at different locations in the world at the same time.<sup>17</sup> Therefore, the objective of the study was to assess medical students’ opinions regarding e learning and to look into the perception of the advantages and disadvantages of the e-assessment in 1st-year medical students.

## 2. Method and Materials

### 2.1. Online registration

The 100 students of 1<sup>st</sup> MBBS were given extensive training on how to register for the e-assessment through an orientation program conducted by Microsoft teams IT department.

### 2.2. Course registration

Later on, intensive training was given to all students through a second orientation program on how to register with their email addresses and passwords for each student from the IT section, through which they were registered for the subject of physiology. Through e-learning during the pandemic, various sections of the subject were taught online live through the same portal whose strength had been updated by Microsoft IT team. Now it accommodate upto 259 students. Thirty MCQ and SEQ from various sections of human physiology taught live on line were preloaded through the Microsoft team’s portal, and the students used their devices to answer the questions within the stipulated time. Since this is the first instance, when online e-assessment in the subject of physiology was conducted by government medical college Baramulla, a questionnaire prepared for the survey before and after the completion was carried out on the student’s perception of the advantages and disadvantages of the e-learning program.

### 2.3. Test date

On the intended day of the e-assessment, the students kept their laptops and mobile phones connected to the Microsoft team application. They navigated into the Educational portal to open the quiz form by a link provided by the IT administrator to access the 30 multiple choice questions and click on the diagram to choose an answer, also with an option for suggestions and comments based on the latest competency based physiology curriculum which were uploaded by the faculty of physiology. The E- assessment was set to start at 11am a pre-determined time was set for the test to begin and end. The reliability /credibility of the assessment process is being continuously upgraded worldwide including Microsoft Online as only one response could be submit per student also the time to answer was factor that limited any chance of forgery.

### 2.4. Assignment

The marks generated automatically at the end of the test for the students to view their responses. Consent was taken from the students, and they were explained briefly about the questionnaire and the study.

### 2.5. Ethical issues

Cleared from students ethical committee

### 3. Results

Immediately after completing the quizzes, a post-intervention survey was carried, as the students received automated and personalized, real-time feedback.

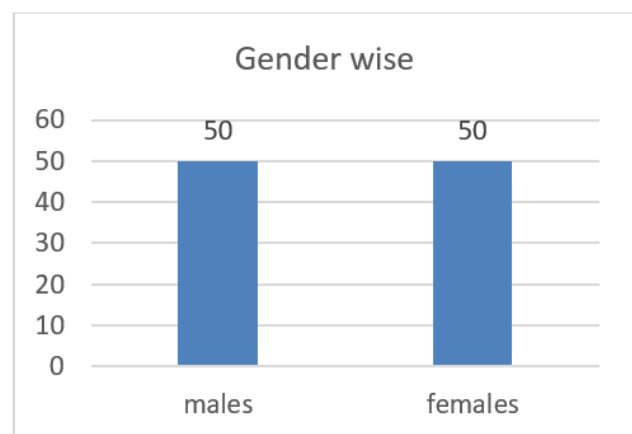


Fig. 1:

There was a significant difference in the post-test score when compared to the pre-test score, as shown in the Table 1 before an e-assessment of the actual subject of physiology, hence quantitative evidence showed that learning has occurred.

### 4. Discussion

In the changing digital age, medical education increasing claims on educators and academicians of having less available time for teaching than before.<sup>13</sup> New technologies, such as the web, digital video, sound, animations, and interactivity, are providing tools that can make assessment design and implementation more efficient, timely, and sophisticated. Academic dishonest-marking is one way that many assessments and awarding bodies, such as Cambridge International Examinations, are utilizing innovations in technology to expedite the marking of examinations. Evidence indicates that formative online quizzes can help students perform better on course assessments (Dobson 2008; Kibble 2007; Velan et al. 2008). Wilson et al. (2011)<sup>18,19</sup> they noticed that students who participated in the formative quiz received a final grade that was 10% greater than those who did not attempt after excluding already higher achievers, as this methodology helps to gain skills in the mechanics of online learning. To have review Moodle.org (2014)<sup>20</sup> has provided a guide using Moodle quizzes designed using the different modes to have deeper learning, i.e., understanding the application and

also the responses are marked automatically (e.g. multiple choice, true/false, short answer, numerical, graphs visual) which were not possible with traditional assessments, though options of manually marking (e.g. paragraph style questions) can also be done. Informative assessment, often defined as 'assessment for learning', digital tools are increasingly being adopted worldwide in higher education institutions to measure students skills and knowledge, which makes it easier to provide tailored feedback, interventions or action plans to improve learning outcome goals of the institutions by allowing the teachers deep insight. Academic dishonesty commonly known as cheating occurs in all levels of educational institutions. In traditional classrooms, students cheat in various forms i.e, hidden prepared notes not permitted to be used or looking at another student's paper during an exam, copying homework from one another, or copying from a book, article or media without properly citing the source. Individuals can be dishonest due to lack of time management skills, a pursuit for better grades, cultural behavior or a misunderstanding of plagiarism are among the concerns that need to resolved to accomplish this transition. Most students will not complete assignments unless there is an assessment (i.e. motivation). It is the instructor's role to catalyze student motivation. Online classroom environments are no exception to the possibility of academic dishonesty. Proper assignments types, meetings, and projects can prevent academic dishonesty in the online classroom

Score. Scholars commonly find many negative impacts of traditional paper-and-pencil assessment methods in research, examination-oriented instruction and the inability to assess high-order cognitive abilities and affective attributes are some examples.<sup>21,22</sup> However, the online assessment may also allow the possibilities for cheating, such as hacking. Seventy-five percent of the students in our study could access the examination and do it in the stipulated time. Those who had problems in connectivity were given extra time being their first experience. Once the exam was complete, the students were able to see the correct answers and get their scores immediately. This caused great excitement in the students as they could correct their mistakes and learn from the errors they had committed. E learning is now being routinely used in physiology and done by anatomy and biochemistry. To enhance the utility, this study has led to curriculum changes and 5% on internal assessment should be given to the online assessments to motivate the students and to develop interest.

This type of survey allows facilitators to collect data and feedback on any type of situation where the course or experience needs justification or improvement further to identify gaps in student learning.

### 5. Conclusion

The use of the computer-based formative test with automated feedback improved the performance of the

Table 1:

Questions about the use of e-learning in assessment	Pre-Intervention Mean ± SD	Summative 8.4%	Both 43.2%	Formal 68.4%	Post-Intervention Mean ± SD	Summative 5%	Level of significance T value P
1. Which one of the tool is good for assessment in guiding student to better learning?	Formal 48.4%	Summative 8.4%	Both 43.2%	Formal 68.4%	Formal 68.4%	Summative 5%	For formal p was < 0.05 significant
2. Do students need orientation for such programs?	Yes 76.8%	No 4.03%	Maybe 18.9%	Yes 95.3%	Yes 95.3%	No 4.8%	For yes p was < 0.05 significant
3. Is it better to do at official places like college or can be done at home also?	Home 30.5%	College 30.5%	Not sure 38.9%	Home= 17.5%	Home= 17.5%	College= 82.5%	For college p was < 0.05 significant
4. Did you want immediate feedback, which will not be possible in the conventional exams?	Yes=78.9%	No=21.1%		Yes=90%	Yes=90%	No=5%	For yes p was < 0.05 significant
5. Where you excited when you came to know about the event?	Yes 63.2%	No 33.7%		Yes 64.9%	Yes 64.9%	No 15.1%	Non significant
6. Will online test prevents you from copying?	Yes 11.6%	No 20.7%	Maybe 48.2%	Yes 53.6%	Yes 53.6%	No 46.0%	For yes p was < 0.05 significant
7. Will this improve your computer skills?	Yes 53.7%	No 18.9%	Maybe 27.4%	Yes 69.8%	Yes 69.8%	No 29.9%	For yes p was < 0.05 significant
8. Do you support the move?	Yes 81.1%	No 12%	Maybe 15.8%	Yes=88.4%	Yes=88.4%	No=9.3%	Non significant
9. Did the message make you to study more?	Yes 60%	No 12%	Maybe 26.3%	Yes 82.6%	Yes 82.6%	No 17.9%	For yes p was < 0.05 significant
10. Are you serious to have them on regular basis?	Yes 69.5%	No 16.8%	Maybe 22.3%	Yes 82.6%	Yes 82.6%	No 11.9%	For yes p was < 0.05 significant
11. Being a professional college, would you agree to have classes on online?	Yes 50.5%	No 16.8%	Maybe 29.5%	Yes 86%	Yes 86%	No 14%	For yes p was < 0.05 significant

**Table 2:** Qualitative analysis using Likert's scale the individual student's perception

Questions about the use of e-learning in assessment	Post-Intervention	
	Mean $\pm$ SD	
1. Was it easy to access to this event?	Min=4.7%	Max=84.2%
2. Is comfort level high in e-learning sessions?	Min=12%	Max=25%
3. Will it be helpful to click on the diagrams, during online test in future, which would have not been possible in other conventional exams?	Strongly=30.2%	Neutral=50%
1. What should be the time limit for such events?	2min=43.2%	1.5 max =20%
2. How many extra hours did you put for the event in hours?	2 hr.=1%	6 hrs. =10%
3. How much time are you spending on physiology only in hours?	2hrs 20%	6hr.=2%

students and can be explored as an optional addition to the curriculum of pre-clinical integrated medical program to improve higher academic ability. Since e learning is not well established in India, we hope to create awareness and change the outlook of medical students about online learning and assessment programs. This can lead to the development of an innovative curriculum. Higher education in India is undergoing rapid progress, and can provide e-learning to the undergraduate curriculum.

## 6. Source of Funding

None.

## 7. Conflict of Interest

None.

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