

Research Article



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THE INFLUENCE OF ONLINE FORMATIVE ASSESSMENT ON UNDERGRADUATE STUDENTS IN THE AREAS OF KNOWLEDGE AND MOTIVATION

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ABSTRACT

Background: Formative evaluation is a continuous process that happens throughout the educational journey. A crucial part of formative evaluation is constructive feedback Teachers carry out formative assessments throughout the learning process in order to adjust instruction and learning activities to raise student achievement.

Aim: The purpose of this study was to ascertain how students' knowledge and motivation were affected by online formative assessments.

Methods: In the study, third-year MBBS students were included. After three months of regular academic instruction, a 20-mark structured internal assessment exam was given. Five online formative evaluations were given to the same group of students every two weeks for the next three months of academic instruction. To evaluate their analytical skills, they underwent periodic online formative assessments consisting of multiple-choice questions, short answer questions (BAQ), and structured case scenarios. Online platform used for these assessments was Google form and Google classroom assignments. After each online formative assessment constructive feedback was given to the students. For the same group of learners, an internal assessment of twenty marks was conducted. The Motivated Strategies for Learning Questionnaire (MSLQ) (Pintrich, Smith, Garcia, and McKeachie, 1991) was used to gauge students' motivation both before and after they took periodic formative assessments, serving as a pre-test and post-test. Each applicant received a composite score, which was determined by summing together all of the replies and varying the values from the least to the most motivated.

Results: There was a statistically significant difference ($p < 0.0001$). Students who took the MSLQ pre- and post-formative assessments had average overall scores of 157.75 and 163.02, respectively. It was also observed that this difference was significant ($p = 0.048$). Students' understanding significantly improved as a result of doing online formative exams. Additionally, students seemed to be motivated for their test.

Conclusion: In summary, formative evaluation is a useful tool for improving student learning by raising their level of understanding and motivation. Online platforms may be used efficiently for this.

INTRODUCTION

Implementing formative assessments is challenging due to time constraints, a lack of faculty, and faculty members' innate reluctance to step outside of the summative assessment comfort zone. Another alternative for formative assessment that might save time and encourage instructors to undertake it is online formative assessment.¹ This study examined the effects of formative and summative assessments on academic motivation, attitude towards learning, test anxiety, and self-regulation skills of EFL students in Iran since evaluations are crucial to the teaching and learning process. Online formative assessments (OFA's) have been increasingly

recognised in medical education as resources that promote self-directed learning. Formative assessments are used to support the self-directed learning of students. Online formative assessments have been identified to be less time consuming with automated feedback.²

Subsequently, the groups completed the pretests for motivation, self-regulation, and test anxiety. Teachers carry out formative assessments during the learning process to adjust instruction and learning activities to raise student achievement.³ Formative assessment can be delivered as informal comments made at the end of a case presentation on a ward round to highly complex and formally structured computer-based learning tools.⁴ Within the clinical context these formative assessment are used to encourage appropriate professional behaviour, to develop clinical competence and to stimulate acquisition of knowledge and clinical reasoning. From the clinician perspective, the time constraint is likely to impact the ability to provide a comprehensive formative assessment task to complement the learning.⁵

Formative evaluation is a continuous process that happens throughout the educational journey. A crucial part of formative evaluation is constructive feedback. It assists the instructor in determining each student's level of achievement and comprehension of the material. Due to time constraints, a lack of faculty and faculty members' innate reluctance to step outside of the summative assessment comfort zone, formative evaluations are challenging to adopt. Another approach that can save time and pique instructors' interest in formative assessment is online formative assessment.⁶

This study was undertaken to determine impact of online formative assessment on student's knowledge and motivation. To ascertain the effect of online formative assessment on students' motivation and knowledge

MATERIALS AND METHODS

The purpose of the study was to determine how undergraduate students' knowledge and motivation in the field of paediatrics were affected by online formative assessments. Included in the study were third-year MBBS students. All participating students provided written informed consent, and the institutional ethics committee granted ethical clearance. After three months of regular academic instruction, a 20-mark structured internal assessment exam was given. The results of their internal assessment were documented.

Five online formative evaluations were given to the same group of students every two weeks for the next three months of academic instruction. Their analytical skills were evaluated by a periodic online formative assessment consisting of multiple-choice questions, short answer questions (BAQ),⁷ and structured case scenarios. Google Classroom was the tool used to administer the exams. Students received positive feedback following each online formative assessment. Three months later, they took a structured internal assessment worth twenty marks, and their score was recorded. The results of the two internal evaluations were contrasted.

The Motivated Strategies for Learning Questionnaire (MSLQ) (Pintrich, Smith, Garcia, and McKeachie, 1991)⁸ was used to gauge students' motivation both before and after they took periodic formative assessments, serving as a pre- and post-test. Each candidate's composite score was determined by summing up all of their replies and varying the values from the least to the most motivated.

Analysis: To determine the significance of the distribution difference at a 95% confidence interval (for the motivation beliefs scale and Internal Assessment scores), a paired t-test was used. P-values were regarded as statistically significant if they were less than 0.05.

RESULTS

This study was undertaken to determine impact of online formative assessment on student's knowledge and motivation. A total of 100 third-year MBBS students participated in the pre- and post-formative assessment internal examination; 40 of them also completed the motivation evaluation questionnaire.

Prior to and following formative evaluations, students' internal examinations yielded mean scores of 10.22 and 12.29, respectively. Pre- and post-formative assessment standard deviations were 1.56 and 2.32, respectively. [figure 1]

There was a statistically significant difference ($p < 0.0001$). Students who took the MSLQ pre- and post-formative assessments had an average total score of 157.75 and 163.02 for motivation, respectively. The pre- and post-formative assessment standard deviations were 16.09 and 16.40, respectively. It was also observed that this difference was significant ($p = 0.048$). [figure 2]

DISCUSSION

This study was undertaken to determine impact of online formative assessment on student's knowledge and motivation. Formative assessment is an effective method for learning promotion and self-inspiration to gain skills and information (4). Formative electronic exams are perceived by students as beneficial for tracking their development, promoting more learning, and enhancing comprehension (5). Online formative evaluations were also seen by students as instruments that support self-directed learning, enhance knowledge, and customise instruction to meet the requirements and learning preferences of each student (6). According to studies, formative evaluations help students retain what they have learned and strengthen their learning habits.

(7). It is anticipated that administering formative assessments online, which may be done at the conclusion of the online course, will save time and be simple (8). There aren't many researches about how online formative exams affect students' understanding, according to a literature search.

The results of this study demonstrate that there were notable differences in the students' knowledge levels as determined by the results of the second internal evaluation. After completing formative tests, the kids not only seemed to know more, but they also seemed more motivated for their test.

The huge sample size, the clarity of the formative evaluations given, and the internal assessment methodologies' consistency made this study strong. The validity of the study's findings is increased by the use of a standardized questionnaire to measure motivation.

A significant constraint on the research was the very low proportion of pupils who answered the motivation evaluation survey. Furthermore, the relatively small set of 20 marks might have resulted in significant variations in the proportion of scores, perhaps overestimating the influence in the end study.

A major limitation of the study was the relatively small percentage of students that participated in the motivation assessment questionnaire. In addition, the small total of 20 marks possibly led to large changes in percentage of scores which may have led to the overestimation of effect in the final analysis.

CONCLUSION

The use of a standardized questionnaire for the assessment of motivation further adds to the validity of study results. Formative assessment is a powerful tool for improving student learning by raising their level of understanding and motivation. This may be accomplished with the help of the internet platform. We need more such study programs for better and accurate results.

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STATISTICS

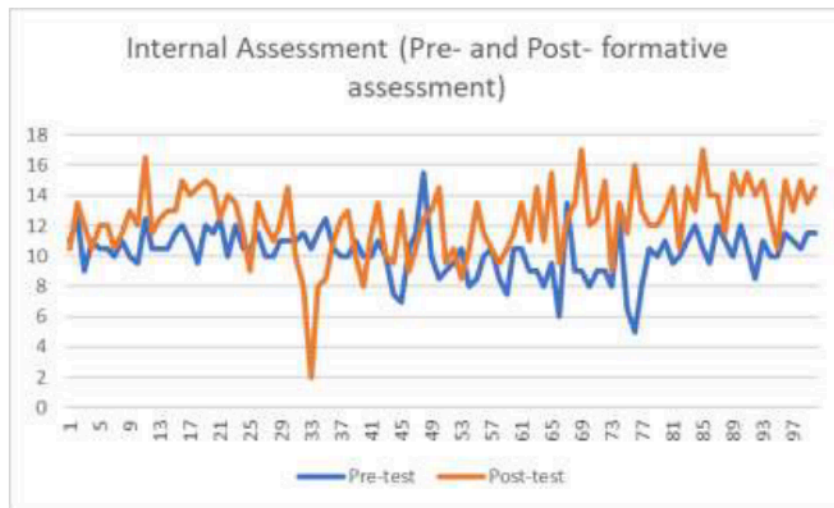


Figure 1

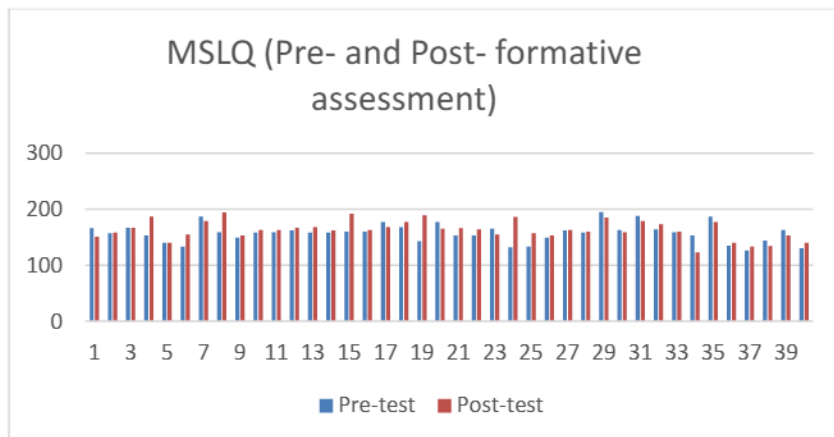


Figure 2