

Report on Improving Student Engagement during In-person Classes by Using Functionalities of a Digital Learning Environment

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Abstract: Under the background of the vigorous development of digital education, students' social and emotional ability has gained new opportunities for development. Analyzing the influencing factors of using the function of the digital learning environment on students' learning ability, introducing the digital learning environment in higher education requires teachers to be able to optimize its use to improve student participation in the face-to-face classroom learning process. Digital learning environments can be used in higher education to help teachers promote student participation in learning and in this way to encourage student participation in learning.

Keywords: Digital education, Learning ability, Higher education.

1. Background and Motivation

Engagement has been recognized as being at the core of the learning process. The introduction of digital learning environments in higher education requires teachers to be able to optimize their use to improve student engagement in the learning process during in-person classes. Digital learning environments can be used in higher education to help teachers to promote engagement in learning among students, and students are incited to engage in learning mediated in this way. Extensive research has investigated how to improve student engagement in higher education, a number of studies have examined student engagement in online and blended learning settings but less research has examined the improvement of student engagement between the beginning and end of a series of lectures using functionalities of a digital learning environment available on the student's device during in-person classes. The aim of this study was to examine an educational intervention consisting in increasing the number of functionalities of a digital learning environment, and measuring how this impacted the different aspects of engagement (cognitive, affective and behavioral) between the beginning and the end of a series of lectures.

2. The Inadequacy of Past Studies

A number of studies have shown an increase in student engagement when different tools were used such as web 2.0 technologies, clickers, virtual worlds, gamification. Overall, these studies demonstrated that it is not the digital learning technology itself, but how it is used by teachers that influences student learning. Although a vivid debate among practitioners has recently emerged about banning or integrating student devices during in-person classes in higher education, growing evidence suggests that teachers would gain by using them to engage their students in learning, and potentially, improve academic performance.

3. Study Object, Study Equipment, And Research Methods

The study sample consisted of 303 students in their first

year of a psychology degree (259 females and 39 males, 5 undetermined), aged between 17 and 36 years old followed a social psychology course. During the lectures, 66.7% of students used a laptop, 27.2% a smart phone, 2% a tablet, 4.1% used both laptop and smart phone.

The digital learning environment, a web-based Audience Response System specifically designed for higher education aiming to transform student devices into learning tools, Wooclap was used in this study. The Engaged Learning Index (ELI) was used to measure changes in the different facets of student engagement in learning between pre- and post-test according to an educational intervention, taking into account the psychological dimensions of engagement in learning: meaningful processing of information (cognitive engagement), focused attention on the course (affective engagement), and active participation during the course (behavioral engagement).

4. Bear Fruit

Student engagement from the first to the last lecture would improve when the number of functionalities of the digital learning environment used by the teacher increased. Only an improvement of affective student engagement in learning, with focused attention on the courses being greater under the 'high number of functionalities' condition than under the other two conditions. The 'high number of

functionalities' condition differed from the other two conditions by providing students with the additional possibility of visualizing the teacher's course slideshow in real time during the lectures. In addition to quizzing and questioning, this additional functionality contributed to increasing focused attention on the course from the first to the last lecture: students paid more attention to the lecture, were less bored and less distracted than under the other conditions.

5. Contribute

This study provides teachers with solutions to improve student engagement using some functionalities of a digital learning environment. Helping students to become engaged in a course may be as important as teaching knowledge and

developing skills. the present findings suggest that using certain functionalities of a digital learning environment may contribute to achieving this objective. It also confirm that it is not the integration of technologies in lectures per se that improves student engagement, but rather the way teachers use them in implementing a set of functionalities which leads to students being more or less engaged in learning. Teaching would be enhanced by understanding how engagement in learning could be increased, and which facets are involved (cognitive, affective, or behavioral). Nowadays, various functionalities of digital learning environments can be used beyond quizzes, and thus different solutions can be proposed to promote student engagement during in-person classes.

6. After Reading the Experience

The characteristics of teaching in colleges and universities (large class lectures) and the characteristics of college classes (most students are not focused and interactive) lead to poor classroom effects and great challenges for teachers. The application of the functions of digital learning environment proposed in this paper, starting from students' cognition, emotion and behavior, can not only effectively improve students' participation in the classroom and improve teaching performance, but also urge teachers to pay attention to students' characteristics, so as to create and use corresponding and effective digital learning environment functions, which is of great help to the common progress of teachers and students. At the same time, in the process of implementation, teachers and students have more exchanges and contacts, which can also enhance the understanding between teachers and students, enhance the feelings between teachers and students, and really play a role in promoting learning and teaching.

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