Investigate students' academic achievements in mathematics course through e-learning approaches

ABSTRACT

This paper investigates students' academic achievements through e-learning approaches based on students' preference. E-learning approaches can be considered as asynchronous, synchronous and blended learning. Asynchronous learning happens when there is no set time for it to occur. Allows students to learn whenever and wherever they want, at their own pace. Web conferencing and chatting are used to deliver organised and time-bound activities characterise synchronous e-learning. Due to the Movement Control Order (MCO), which went into effect on March 18, 2020, lecturers at the Preparatory Centre for Science and Technology, Universiti Malaysia Sabah (PPST, UMS) could teach either synchronous or asynchronous classes. The independent sample t-test will be used, and the outcomes reveal statistically significant difference in the mean of both online learning strategies. Therefore, from the results we can conclude that students that prefer asynchronous learning approach improves the academic performance of students. However, higher end-of-course grades in asynchronous courses do not necessarily indicate that the asynchronous mode of instruction was more effective. This is because based on students' preference for both methods that asked in questionnaires. The results also can be affected by various factors such as blended learning that is implemented for learning.