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**Increasing student engagement using a blended learning environment: A case study of undergraduate biology students**

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Student engagement is critical in achieving the learning outcomes, improving the quality of learning, and enhancing the retention and completion rates for students studying Science, Technology, Engineering and Mathematics. In this paper, firstly we discuss some of the challenges to increasing student engagement for undergraduate biology students which include reluctance to ask questions during lectures and tutorials, differences in cultural and intellectual backgrounds, asynchronous nature of learning and passive learning environments. We then outline strategies using information communication technologies to increase student engagement in a blended learning environment. In particular, we evaluate the effectiveness of online discussion forums, instant messaging, online quizzes, videos and open educational resources in enhancing student engagement. Our findings suggest that there is greater student to teacher and student to student interaction when using a blended learning environment. This caters for students with diverse learning styles and has led to better performance of students in both formative and summative assessments, and also contributes to the development of transferable skills.

**Key words: Higher education, Student engagement, learning environment.**