

STANDARDS AND EFFECTIVENESS OF ONLINE LEARNING IN ENGINEERING PHYSICS

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ABSTRACT

This is a preliminary study. Because of budget constraints and large first year classes there is a move by administrators to get academics to use online learning tools for tutorials rather than face-to-face tutorials. There are a number of on-line tutorial systems (such as, CyberTutor, MasteringPhysics) available for use. We used the MasteringPhysics online tutorial system which is based on the 'Socratic' tutoring style. The software has the capacity to ask questions, provide hints, feedback and other learning devices, such as animations which serve to assist the learning process. The system was trialled with over 100 first year engineering students with various levels of preparation and understanding of concepts and processes in engineering physics to see how effective it was. There were a number of positive outcomes in the introduction of MasteringPhysics. Some of them are as follows: Over 64% of the students agreed that the content of the questions was relevant to their engineering studies while 63% felt that it helped them in their learning and understanding of the subject. As to the question of acquiring analytical skills, over 63% agreed that the program assisted them in solving the problems. About 50% of the students felt that the e-learning resources assisted them in the learning process. Overall, a fairly large proportion (67%) of the students felt that although the MasterPhysics program was useful they would prefer face-to-face tutorials.

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