

Flipped Learning in the Delivery of Structural Analysis

Authors : Ali Amin

Abstract : This paper describes a flipped learning initiative which was trialed in the delivery of the course: structural analysis and modelling. A short series of interactive videos were developed, which introduced the key concepts of each topic. The purpose of the videos was to introduce concepts and give the students more time to develop their thoughts prior to the lecture. This allowed more time for face to face engagement during the lecture. As part of the initial study, videos were developed for half the topics covered. The videos included a short summary of the key concepts (< 10 mins each) as well as fully worked-out examples (~30mins each). Qualitative feedback was attained from the students. On a scale from strongly disagree to strongly agree, students were rate statements such as 'The pre-class videos assisted your learning experience', 'I felt I could appreciate the content of the lecture more by watching the videos prior to class'. As a result of the pre-class engagement, the students formed more specific and targeted questions during class, and this generated greater comprehension of the material. The students also scored, on average, higher marks in questions pertaining to topics which had videos assigned to them.

Keywords : flipped learning, structural analysis, pre-class videos, engineering education

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