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A theoretical approach to ensuring instructional and curricular coherence in the flipped classroom model of a differential equations course.

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Summary: Over the past two decades, the flipped classroom model has gained traction in post-secondary educational settings. However preliminary studies indicate that students perceive a disconnect between out-of-class components and in-class components which may be amplified by the flipped classroom model. The purpose of this paper was to present students' perceptions of instructional and curricular coherence in a flipped version of a Differential Equations course for 80 undergraduate engineering students. The course was designed to address cognitive obstacles and to reduce the perceived disconnect between in-class and out-of-class activities. Students' perceptions of the course suggested that our model for flipped classroom design did circumvent many of the instructional problems reported in prior studies of flipped classrooms.

Classification: D45 U55 U75 I75

Keywords: flipped classroom model; cognition; post-secondary education

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