Conference Interactive Program

TRB 90th Annual Meeting (January 23-27, 2011)

Event Number: 652

Event Title: Emerging Learning Concepts and Formats in a Traditional Undergraduate Classroom Education Setting

Event Date: Jan 26 2011 8:00AM- 9:45AM

Event Location: Hilton, Columbia Hall 6

Event Description: This session includes papers that discuss research efforts to assess emerging learning concepts and formats in in-class transportation education as a potential means to improve the transportation learning experience of undergraduate students.

Event Agenda:

Traffic Engineering in a Hybrid Format: More Learning with Less Meeting (11-1639)

In the Civil Engineering curriculum at Cal Poly, CE 421 (Traffic Engineering) course is intended to provide students with details of driver behavior, traffic characteristics, and design considerations for addressing traffic problems. In fall 2008, this class was taught in traditional Face-to-Face (f2f) lecture format. Based on the student feedback received at the end of the quarter and success in achieving learning outcomes, it was determined that the course should be more student-centered and there should be a 2-way feedback mechanism between students and instructor throughout the quarter. Based on this evaluation, the course was redesigned and taught in the new “hybrid” format during fall 2009 and spring 2010 quarters. This paper discusses how the lessons learned from hybrid redesign of a course in other fields of higher education can be applied in the context of a traffic engineering course. The hybrid format involved reduced f2f meeting time and included learner centered online activities. The material was ‘front-loaded’ for the students by using PowerPoint presentations with narrations so that they could come prepared for the in-class lecture. The online activities also included simulation and surveys demonstrating the variation in reaction time of drivers, videos for demonstrating the level of service (LOS) concept, and a new type of traffic control for intersections. These online demonstrations were followed with a survey for the students to fill out. The results from these surveys were then discussed in the class for achieving the underlying learning outcomes. A set of potential survey questions is provided in this paper as guidance for the instructors in the transportation engineering area.

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