Canadian Association of Physicists | Association canadienne des physiciens et physiciennes

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Blended Introductory Physics Course for Science Programs: Instructor's Experience of NCAT Redesign

Thursday 1 June 2017 13:30 (15 minutes)

The talk will present the instructor's perspective on course redesign using the National Council for Academic Transformation (NCAT) approach. NCAT is an independent, non-profit US-based organization that provides leadership in using educational technologies to redesign learning environments with the goal of producing better learning outcomes for students at a reduced cost to the institution. In 2014 Ryerson University applied for and received funding from the government of Ontario to carry out a pilot course redesign project. The project pursued two simultaneous goals: improving student learning outcomes and the institution's capacity to deliver thus enhanced educational experience efficiently (productivity). Large-enrollment (450+ students) introductory physics course for science programs was among the fourteen courses selected for the pilot. The redesigned course can be characterized as active learning blended environment with partially flipped lectures and with a significant online component to extend learning beyond the classroom. The online component of the course provides ongoing automated but highly individualized feedback and ensures that the students can work at their own pace. The role of the tutorial Teaching Assistants shifted from administering and grading toward more tutoring and mentoring roles. The students achieved better mastery of core physics concepts included in the course syllabus. The improvement in retention and successful completion rate was achieved with the existing resources and without increasing the cost of course delivery.

Author: Dr ANTIMIROVA, Tetyana (Ryerson Univeristy)

Presenter: Dr ANTIMIROVA, Tetyana (Ryerson Univeristy)

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