

MAKING THE FLIP: INTEGRATING FLIPPED LEARNING ACTIVITIES INTO THE MATHEMATICS CURRICULUM

Stephen Bush (Stephen.Bush@uts.edu.au)

School of Mathematical Sciences, University of Technology Sydney, Broadway NSW 2007, Australia

KEYWORDS: Mathematics, Statistics, Flipped, Resources, Formative Assessment

BACKGROUND

The School of Mathematical Sciences at UTS is embarking on major curriculum renewal in 2014. One of the goals of this renewal is the integration of Learning2014 approaches into the curriculum. One of these approaches will be the 'flipping' of the classroom. That is, we will ask students to complete a series of tasks before class, covering the basics of the topic to be discussed in class, and then devote the face-to-face time to appropriately guided problem solving activities (preferably in groups) and more complex concepts as well as aspects of the pre-work that students found difficult.

AIMS

The aim of this project is to develop a pool of digital resources that staff and students alike can access. Staff can draw from these resources when developing flipped learning activities and students can access these resources, either as part of a 'flipped' learning activity, or refreshing concepts that they learned in previous subjects. This project aims to cover the breadth of the Mathematical Sciences curriculum, including applications of these concepts, and careers information.

RESULTS

In this presentation, we present our progress in collating these materials and discuss some ways of gauging student understanding of the ideas contained in the assigned pre-class digital resources. The purpose of these activities is to readily identify which misconceptions need to be incorporated into classroom activity.

CONCLUSIONS

In preliminary work, we have found that about 40% of first year engineering students used mathematics and statistics resources when presented in our CMS (UTSOnline, Blackboard).

Proceedings of the Australian Conference on Science and Mathematics Education, University of Sydney, Sept 29th to Sept 30th, 2014, page 15, ISBN Number 978-0-9871834-3-9.