
MIROSLAV LOVRIC, McMaster University
Learning Mathematics in Interdisciplinary Context

The aim of my research is to investigate the impact of an interdisciplinary program (in particular, McMaster's iSci = Interdisciplinary Science Program) on learning of mathematics in the first year of university. To what extent does the rich interdisciplinary learning environment enhance and deepen learning, both in terms of content knowledge and mathematical skills (formation of a precise mathematical argument, communication of scientific ideas, etc.)?

A pre-test/ post-test scheme is used to collect the evidence. In the first week of classes in September, students are administered an unannounced 50-minute survey, which gives an initial assessment of their general math knowledge and skills. After students complete the survey, no aspect of it is addressed in lectures. Eight months later, at the end of the school year, students are given the same survey, again unannounced. What is the purpose? None of the survey questions are explicitly discussed in lectures. However, throughout the first-year instruction in iSci students are exposed to a number of activities (such as problem-solving, critical thinking, creating precise scientific arguments, and so on), which can help them answer test questions better than at the start. The purpose of this approach is to determine whether students did learn math in the sense of being able to apply it to situations that were not explicitly addressed in lectures.

In my talk I will present the data, discuss interesting and relevant findings, and comment on the implications for other disciplines, within as well as beyond the iSci program.