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Identifying mathematical “trouble-spots” - the challenge of collecting useful qualitative data on students’ visits to a Maths Support Centre at a university in Ireland

Day 1 – Parallel II (15.05-15.35)

Since September 2008, there have been approximately 19,500 visits in total to the UCD Maths Support Centre (MSC). Over this time the MSC has seen an increase in visits by students from access level all the way through to PhD level and an increase in visits from students who may not be studying a mathematics module, yet encounter mathematical difficulties in other subjects. For each visit, there is an electronic record of the mathematical topic that the student sought support for and the module the student is studying in addition to other information. To date this information has been used to guide service provision in the short term and evaluate student satisfaction.

A precursory glance at the MSC data suggests that there are certain basic mathematical topics and concepts that cause persistent difficulties for students. Diagnostic testing, as carried out in many third-level institutions, has been effective in identifying and highlighting widespread areas of mathematical weakness. We believe that the data gathered by the MSC, particularly the comments entered by tutors on students’ difficulties, is also a very valuable resource. However our first look at initial data collected proved disappointing as we found the tutors’ comments too broad in nature and lacking in the detail necessary to effectively identify and diagnose the basic mathematical difficulties that were underlying some of the queries and topics that students presented to the MSC with.

Our challenge in 2013-2014 was to develop a process of qualitative data collection. For our first step in the process we undertook a six-week pilot study starting in October 2013 with the aim of developing suitable categories for the basic mathematical problems that students presented with in the MSC. In speaking to the manager and the MSC tutors we emphasized the importance of recording not just the mathematical topic that students presented with, but more importantly, identifying and recording the basic mathematical difficulties that the students encountered while working through problems. In February 2014 we met again with the MSC tutors before the commencement of data collection in the second semester. At first we asked if they were willing to act as participants in the research process and all agreed. We then discussed how we might be more specific in our topic entries and at the same time find ways to ease the work involved for the tutors. Their enthusiastic support for the research led to some very useful modifications to our data recording. We have now completed our first semester of qualitative data collection using the above procedures.

In this talk we will describe in detail the data collection process and take a first look at the qualitative data gathered.