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In what ways do lecturers receive and use feedback from large first year mathematics classes?

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We report on a study aimed at examining the ways in which lecturers of large mathematics classes receive and use feedback from their students, with a particular focus on how they use feedback received via the Maths Support Centre (MSC). Three separate interviews with each of thirteen lecturing staff over the course of one semester were conducted. We discuss the ways in which these lecturers receive and use ten modes of feedback from their students and examine where the feedback received by the MSC sits in the general context of this feedback. We conclude that MSC feedback is one of the most valuable to lecturers and state the reasons given for such a claim.

Research questions

- How do lecturers receive and use feedback from large first year mathematics classes?
- In what ways, if any, do lecturers find the feedback provided by the MSC on students’ visits, useful? How do they use it?
- Where does MSC feedback sit placed in the general context of formative feedback?

Methodology

Thirteen lecturers from a research-intensive university in Ireland volunteered to participate in this study. Lecturing experience varied from two to seventeen years and two lecturers were teaching their particular module for the first time. The modules’ sizes ranged from 66 to 550 students in subjects including Calculus, Statistics, Linear Algebra, Computer Science and Applied Mathematics. Twelve of the 13 classes we examined were mathematics/statistics modules taught to non-mathematicians, in particular the cohorts consisted of agriculture, computer science, engineering, business, science and applied mathematics students.

Thirty-seven semi-structured interviews consisting of three interviews with each lecturer were conducted in semester one of 2014/15 (interview one was not conducted with one lecturer as there was no MSC feedback to discuss at that time and the final interview for one module was conducted with both co-lecturers of that module simultaneously). This feedback, on the content of each students’ visit, is generated by the attending MSC tutor and electronically uploaded (anonymously) in real time via the MSC software system where it can be viewed at any time by the lecturer (Cronin & Meehan, 2015). Interview 1 was an exploratory interview conducted in week 4 of the teaching term where lecturers were asked to review the MSC feedback collected from their module to see if they could identify the topic and mathematical difficulty being reported. The mathematical content of this feedback is discussed in the PhD of Nuala Curley and more information is available in Curley & Meehan (2016). Interview 2 was conducted in week 8 where lecturers were asked to comment on the various ways in which they receive feedback from their students and to comment on the usefulness of each. The third interview, conducted three weeks after teaching had finished, invited lecturers to
summarise their experiences with the MSC feedback mechanism throughout the term and discuss the value associated with each of the feedback forms they received from students throughout the module. Interviews were analysed using thematic analysis (Braun & Clarke, 2006).

Findings

Lecturers reported nine ways in which they receive feedback from large classes. These are: in-class questions, after-class questions, continuous assessment (e.g. quizzes), midterms and final exams, module tutors, online activity (Blackboard, Moodle, WebWork etc), the institution’s Module Feedback system, staff-student fora and MSC feedback (Figure 1). Lecturers identify MSC feedback as one of the most valuable forms of feedback from a large mathematics class. In particular it is specific, detailed and lecturers reported that it aligns closest to in-class questions as it is content based, formative and in real time. It is mathematically accurate being the MSC tutor’s interpretation of the student’s difficulty. Lecturers stated that it is reassuring and confirms what is been asked at (and after) lectures. Many instructors stated that reviewing MSC feedback has had impact on their practice including; revising lecture content, writing midterms and revision classes, omitting material and delaying (or bringing forward) continuous assessment components.

![Feedback from large classes](image)

**Figure 1: Usefulness of feedback forms to lecturers**

References

