ASSESSMENT AND STANDARDS IN UNDERGRADUATE MATHEMATICS – PART 2

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BACKGROUND

The national project *maths assess,* led by Universities of Monash, Melbourne and western Sydney, aims to deliver mathematics assessment standards and a system of rubrics that clearly identify the levels of standards which is applicable for all tertiary institutions. Assessment And Standards In Undergraduate Mathematics –Part 2 aims to put the rubric system developed so far to practice, to get qualitative and quantitative feedback from unit coordinators, tutors and students.

AIMS

Main objective was to investigate the following areas.
1. Compatibility of Criteria Bases Assessment (CBA) with the traditional assessment method and its effectiveness as an assessment scheme.
2. Tutors perspective: is CBA productive considering the time spent and the feedback provided?
3. Students perspective: does CBA provide the student with better feedback?

DESCRIPTION AND INTERVENTION

The first year students at the University of Tasmania undertaking the unit Mathematics 1A were assessed using both CBA and tradition assessment processes for three assignment tasks occurred during semester 1, 2014.

DESIGN AND METHOD

Detailed key assessment criteria were developed for the chosen three assessment tasks (Test 1, Test 2 and Assignment 10), using the frame work of the rubrics already established by the *maths assess* team. The assessments were carried out using traditional and CBA methods. The consistency of the assessments was compared by a linear regression. Tutors' perspective and students' view point towards CBA process were sought through a questionnaire for tutors and a student survey.

RESULTS

For all three assessment tasks, the two methods of assessment were compatible in regards to the scores obtained (correlations $R \frown 0.9$). The residuals from the linear fits were not consistent: Test 1 and Assignment 10 had uniform residuals; CBA scores for Test 2 were highly skewed. Tutors' general perspective included that CBA did not give the student the individual attention that is necessary to move forward ('does not indicate the location of a student's mistake in their working'); the time spent on developing individual schemes and marking for different tasks outweighed the benefits it provided the students. The students' response to the survey was very poor at this stage of investigation (4% response).

CONCLUSION

The traditional assessment and CBA procedures were compatible in terms of the standards a student achieves. The abnormalities seen in the comparison of scores obtained in two processes in Test 2 maybe due to the particular nature of the set of detailed criteria used for that task; this demands further investigation into developing the detailed criteria considering different cohorts in a group. Tutors' comments indicate that the process needs refinement particularly in the areas of feedback to students. An effective scheme will have to be developed to get useful response from students, which incorporates an incentive for them to participate in the survey.