Maths Diagnostic Testing - PTAS project Summer 2012

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The principal outcomes of this project were as follows:

- The Diagnostic Test was shown to correlate with Year 1 performance for students in Mathematics courses.
- We are able to introduce benchmark scores on the test: below 55% is indicative of a need for further background study; below 75% indicates the student should not attempt 2nd year direct entry.
- Analysis by classical test theory and also using Item Response Theory indicates that a reduced test of 20 questions in 90 minutes would have most of the discrimination that the original 32 question one has.
- Analysis of year 1 success versus engagement as measured by tutorial attendance showed significant correlation. Each missed tutorial is associated with an exam mark reduction of between 3.5 and 5.0 marks, depending on the course and modelling assumptions.
- Initial analysis of gender versus performance showed a very significant outperformance by males in one particular first-year course, with 67% of female students appearing in the bottom half of the class. This suggests the need for further monitoring and investigation.
- Analysis of diagnostic test and year 1 results versus domicile on entry split as Scotland, Rest of UK, European (non-UK), Rest of World showed significant differences in performance. The European group fare considerably better than the "Rest of UK" group who in turn outperform Scottish students. The details of this need further work.
- The project has given us an overview of Year 1 performance and some factors affecting it.

For detailed results see the accompanying documents "Summary of Results" and "Tariff results". More data is available to interested colleagues.