



PTAS Project Report (for SMALL PROJECT GRANTS)

Project Title: A comparative study of home and international students' expectations and achievements in sciences, maths and engineering disciplines.

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School / Department : Physics & Astronomy

Team members : Alison Kay

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Grant recipients are expected to submit a brief report at the conclusion of their project which outlines briefly the following : nature of work completed; outcomes; benefits to student learning/student experience; dissemination activity (where relevant – actual and planned) and how the activity could inform future work or be transferred to other subject areas in the University. The brief report will be published on the IAD web pages.

Brief Report (maximum 500 words)

Two online surveys were administered to all undergraduate and taught postgraduate students who were in their first year of study in a science, mathematics or engineering discipline in 2011/12 at the University of Edinburgh. The first survey (conducted early in semester 1) asked about students' past experiences of assessment and feedback together with their expectations and experiences thus far at Edinburgh. The second survey (conducted towards the end of semester 2) focused mainly on students' experience of examinations at Edinburgh and how this compared with their expectations and previous experiences. Additionally, a number of face-to-face focus groups were held after the first survey to explore some of the issues raised in more detail. We also examined course documentation to obtain detailed information on assessment practices in participating Schools.

It was clear that the situation is very nuanced; different student groups have different prior experiences, different views on the purpose of assessment and different expectations of assessment at university. It was clear that international students, particularly at taught postgraduate level, arrive relatively unprepared for the UK assessment system. Perhaps unsurprisingly, differences in performance between home and international undergraduates emerged most clearly in essay-based assessments. However, this effect appears to be subtler than merely an artefact of language skills. In our study, essay-based exams were found to offer a relatively free choice of question but with little 'guidedness'; questions are not generally broken down into smaller components. In contrast, problem-solving exams (common in STEM disciplines) offer a limited choice of questions, but individual questions are broken down into smaller steps i.e. there is a relatively high degree of 'guidedness'. It was evident that there is a relative lack of understanding among international students in particular that one of the aims of assessment is to test reasoning. Arguably, problem solving assessments provide more explicit guidance on this than essay-based assessments. It follows, therefore, that students who don't appreciate that their reasoning skills are being tested tend to perform less well in assessments such as essays where this expectation is not made explicit. Findings also indicated that many students found the 'mechanics' of sitting exams quite unusual. It was evident that



students had very different past experiences of sitting exams in terms of the formality of the exam setting; the administrative procedures to comply with when filling out question booklets and the anonymity of papers. It seems that many students did not know what to expect when sitting examinations at Edinburgh, especially taught postgraduate students who had previously had experience of sitting university exams. It would therefore be beneficial to encourage Schools to provide explicit guidance as to what to expect well in advance and to highlight where such guidance can be found e.g. in course documentation.

This study led to an HEA-funded follow-on project. Outputs from both projects are available at

<https://www.wiki.ed.ac.uk/display/ISAF/>

Publications include:

A Kay, J Hardy & SP Bates, A level playing field? Students' experiences of assessment in stem disciplines, *Proceedings of the HEA STEM Learning and Teaching Conference, 2012*, https://www.heacademy.ac.uk/resources/detail/resources/detail/disciplines/stem/conf_12_kay

J. Hardy, A comparative study of the expectations and attainment in assessment of international students in science, engineering and mathematics, *HEA Teaching Development Grant Final Report, 2014*, https://www.heacademy.ac.uk/resources/detail/internationalisation/TDG_Judy_Hardy_Rd1Individ

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Financial statement (please delete as appropriate):

Either

This project has utilised the funding awarded to it by the PTAS adjudication committee and the Principal Investigator or School Administrator appropriate can provide financial statements showing the funding usage as and when required by the UoE Development Trusts who may require it for auditing purposes.

Please send an electronic PDF copy of this report to:

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