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Transforming Assessment In Higher Education

A Case Study Series

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Case Study 1

Developing Assessment Literacy and Engagement in Stage One BSc Computing Students

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Background

This case study discusses how we develop assessment literacy and engagement in a BSc Stage One (level 4) Software Engineering Professional module. Most students in the class come straight from traditional schooling or FE colleges and are not yet aware of how instruction and assessment differ at University. In particular, they often struggle with HE's greater requirement for independent learning and the consequences this has for their skill development and ability to use feedback effectively. There is a clear need to address the problem early so that students build the confidence, resilience and adaptability needed for their career.

The immediate challenge comes from student reluctance to engage with the module content (covering the practices, skills and professional expectations for a software engineer), because they see it as non-technical and therefore irrelevant. This is particularly true for material about learning and assessment. Thus, the challenge is to make learning as personal as possible so that they see the relevance for their own development, and also as focussed as possible so as not to lose their attention.

Approach

Students are introduced to essential, non-technical skills by framing assessments to directly appeal to students' desire for more technical content. For example, students (in teams) give a presentation on a programming language of their team's choice. This develops team working, negotiation, and presentation skills, whilst improving understanding of programming. We also encourage students to take part in

extracurricular, non-assessed activities such as hackathons, team challenges and mock assessment centres to help them engage with (and reflect on) the non-subject-related skills.

To address more general issues of literacy, in our introductory lectures emphasis is placed on the need for a Computer Scientist to develop four literacies – Information, Digital, Assessment, and Design – as part of their skill set, giving examples of how they will apply these throughout their careers. Later, to support assessment literacy, we give an introduction to learning theory, covering such ideas as deep and surface learning, and learning preferences (Felder and Brent, 2005; Felder and Silverman, 1988; Price et al, 2012; Rogowsky, Calhoun and Tallal, 2015). Formative exercises to develop assessment literacy include:

- Students complete an online learning preferences protocol (Felder and Soloman, 1996) and reflect on the results they receive. Many of the students are surprised by what they read, and a significant number report an intention to change the way they work based on the information. It is hard to know how many follow through with this, though later conversations indicate that some do indeed adapt their way of working. However, exposure to information about preferences is always going to be useful.
- Students mark anonymised samples of work, covering a range of quality from poor to excellent, from a previous year. Intentionally, we give them no training before this exercise so that they approach it in the way that they believe markers work. Samples are chosen to be similar in style to an assessment that the students have just completed, and they mark and write feedback for them. Few of the students have ever had to do this, and the difficulty they face opens their eyes to the marking experience of their lecturers and helps them to understand how their own work is assessed. Whilst they are prepared to allocate marks, many are reluctant to even attempt to give useful feedback.

The culmination of this exercise is to ask the students for a show of hands for the marks awarded to each sample, and to reveal the marks actually allocated by the markers. The exercises are marked out of 10 and it is normal for each sample to be graded by at least one person in the class at every point on the scale. We then explain the rationale for the actual marks and how they were arrived at.

Examples of summative assessments relating to engagement are given below. For each, we make use of Newcastle University's Graduate Skills Framework (Newcastle University, 2014) to increase the focus on self-assessment and reflection. The framework includes subject-related, cognitive, planning, communication and teamwork skills.

- A 24-hour assessment where we provide students with the coursework specification on the day before it is due. The exercise is framed as a "sprint", a software engineering technique widely used in industry. The compressed time frame encourages students to engage more fully with the module's practical classes. Students conduct a usability analysis of a VLE using Nielsen's usability heuristics (Nielson 1994). They produce a report on their assessment of the VLE against the set criteria, introducing them to systematic analysis using a framework, whilst also developing their writing skills.

- Students write a reflective blog, in which they complete a self-assessment of their skills based on the Graduate Skills Framework and the Faculty Marking Criteria. Using an online portfolio, students select the relevant Graduate Skills for their self-assessment. Having completed the sprint when tackling this exercise, the students are more open to tackling this kind of writing task, and framing it as a blog also addresses the reluctance that some students express with respect to the idea of "essay writing".

Outcome

The activities for assessment literacy have led to some surprises for the students, as they begin to learn how they are being assessed and how marking criteria are applied. We carry out a similar exercise when training postgraduate demonstrators, with similar results. It is important not to neglect the development of all teaching staff, many of whom are not always aware of the notion of assessment literacy. In order to change this, our School introduced a "Coursework Czar" who reviews all coursework specifications and provides feedback not only on such things as content and mark schemes, but also on diversity and cultural issues. This has proved to be successful and staff are now much more careful when writing their specifications, much to the benefit of the students.

Reflecting on their own attainment of graduate skills leads to the students being more engaged with their own learning and with the material. Comments from module evaluation include: *"Moving from school to university was difficult at first, due to more emphasis on self-study and teamwork. The … module has helped a great deal with this, through various team and personal assignments and in lectures."*; *"This assignment made me more confident about presenting a subject in front of people and it also gave me some leadership skills. I learned how to meet group team deadlines making me better in time management"; "I had never presented a PowerPoint in front of this many people before … I really developed my presentation and communication skills, and for my research had improved on my analytical skills… I felt the pressure of needing to not let the team down, and spent a lot of time on my slide"*

A high level of engagement was seen in the reflective blog, with a 100% submission rate. Initially, some students struggled with the concept of reflection, but with encouragement are able to move away from a "descriptive diary" of what has happened, and towards analysis and planning for future behaviour.

Feedback received by the module leaders illustrated growing understanding of professional skills:

- *"Sprint 1 also allowed me to simulate what work would be like in the professional workplace where deadlines are set short and must be met, requiring both time management and persistence"*
- *"We had 24 hours to perform a thorough analysis …. It helped me understand the importance of self-awareness and reflection and proper time management."*

The steps outlined here include some work specific to the Computing discipline, but these would be transferable to an equivalent exercise in other disciplines. The assessment literacy exercises are already generally applicable. The positive student response observed in their blogs and module feedback is encouraging, and we are building on this by revisiting the assessment literacy exercises so as to be able to better evaluate any behavioural changes they induce. We continue the reflective blogging process into the following stages of the students' development, to encourage them to continue to reflect upon their own learning throughout their university career and beyond.

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