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ESSAY COMPETITIONS - VALUABLE FEEDBACK FROM ENGINEERING STUDENTS

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INTRODUCTION

This paper considers the use of essay competitions for gaining student feedback on engineering education. It refers particularly to essay competitions for engineering students run in recent years by the Engineering Subject Centre of the HE Academy. It considers the characteristics of this approach to gaining student feedback and describes some other examples of essay competitions used for similar purposes. It describes the organisation of the competitions run by the Engineering Subject Centre and assesses the level of engagement by academic staff and students. It summarises the feedback on experiences of engineering education that has been gathered by these competitions so far.

The Engineering Subject Centre of the UK Higher Education Academy (previously 'LTSN Engineering') is the national support centre for all UK engineering academics, promoting quality learning and teaching by encouraging the sharing of good practice and innovation through a variety of mechanisms, including providing events and producing resources. In 2003/04, 2004/05 and 2005/06 the Engineering Subject Centre has run student essay competitions. The idea started from a simple desire to gather student views on engineering education. It was hoped that the shortlisted essays published on the website would be a useful resource for engineering lecturers. Another incidental but valuable aim was to increase the involvement of students with the subject centre.

The title in 2003/04 was 'What makes a good engineering lecturer?'. In 2004/05 it was 'What makes the best learning experience for an engineering student?'. The competition is being run again in 2005/06, with the title 'How does your experience of your course compare with any expectations you may have had?'. The 2004/05 and 2005/06 competitions have

been run simultaneously by other subject centres.

ESSAYS AS FEEDBACK

As a method of gathering student feedback, an essay competition differs in a number of ways from the usual student feedback mechanisms. Most student feedback is collected in the context of a particular institution, for a specific part of a course, delivered by specific individuals. A feature of these competitions is that they are not institution-based. The exercise has created a resource in which no individual academics are being judged - at least not in a readily identifiable form. The titles have encouraged emphasis on positive rather than negative aspects. And because students have freedom to write what they want (in response to the title), some of the submissions are very entertaining. A thorough judging process has ensured that the best essays have been identified, and these are available to engineering lecturers via the Centre's website. They form a valuable resource: well thought out and well expressed insights into students' preferences in learning and teaching.

In each year, a specific title has been set. Other similar student essays competitions, with the aim of eliciting student feedback on teaching and learning experiences, are often less specific about title. For example, HE Academy, Health Sciences and Practice, has run a competition for a number of years starting in 2001. The competition has asked for essays on learning experiences but a specific title has not been specified. A commentary on the winning essays in 2001, 2002 and 2003 has been published on the website (McKee[1]). This identifies the main themes and concludes, 'through research we will examine more closely what it is really like in higher education for both tutor and student, grounding definitions of good practice in an understanding of the realities on the ground.'

The University of St Andrews learning and teaching unit (SALTIRE: St Andrews Learning and Teaching: Innovation, Review and Enhancement) has an annual student essay competition across all subject areas in which students are invited to 'review their learning experiences here at St Andrews in a creative, succinct and meaningful way' (University of St Andrews[2]). The winners are published on the website. The essays are on a very wide range of topics. No overall analysis has been carried out so far - the essays are considered to be a resource in themselves.

Clearly a successful exercise of this sort can be conducted without specifying a title, but then, obviously, it will not necessarily draw out comments in specified areas.

ORGANISATION

The idea of running the competition came up at an Engineering Subject Centre Management Committee meeting and was taken up enthusiastically by Centre staff. This was because it seemed to achieve a number of goals: making the subject centre better known among engineering students, using and celebrating what students might have to offer, eliciting views that would be of interest to engineering lecturers, and creating an opportunity to publicise the work of the Engineering Subject Centre generally.

The primary aim of the design of the competition was simplicity – to make it easy for lecturers to understand and promote, for students to participate in, and for the Subject Centre to run and assess.

The information for lecturers was kept simple with promotional material supplied to them by web and email. The Subject Centre supplied them with posters and flyers (if required) and also handled all submissions through an online process. This meant that lecturers could easily participate in many different ways from fairly passive (put poster up in department), through quite active (talk about competition, hand out flyers, remind students of deadline etc) to very active (build competition into module, ensure internal deadline is before competition deadline, and encourage best authors to submit their essays). The Subject Centre Administrator acted

as a dedicated contact for lecturers and co-ordinated the whole competition.

For students, the rules were kept to a minimum and made available via posters, flyers and the web. The essay word count was relatively short with a maximum of 1000 words, and as much freedom as possible was given in the writing (within the constraints of the title). The submission process was simple and was known to work well as it had previously been widely and successfully used for similar Subject Centre activities.

The Subject Centre has an established network of Departmental Contacts across the UK higher education engineering community to enable the Centre to communicate with departments effectively (www.engsc.ac.uk/an/contacts/index.asp). The competition was promoted to students through this network of contacts. Initially a few departmental contacts were informally approached and were all enthusiastic in their support of the initiative. The initiative was then advertised on the centre's email list and engineering academics were asked to volunteer as contacts to receive and distribute the publicity material. The volunteers all then received posters to display around their departments and flyers to distribute directly to their students. In addition, all Subject Centre departmental contacts received one poster and postcards.

Direct online submission reduced the likelihood of errors or 'lost/late' entry complaints. A similar assessment process to conference/journal paper review (see below for more details) was used, keeping the required assessment of the reviewers to a minimum and ensuring the active involvement of senior academics from across the UK.

Sponsorship and publicity were obtained retrospectively once support for the competition and quality of entries was known.

In 2003/04 the Centre received 29 entries from engineering students at the following nine institutions:

- University of Bristol
- University of Brighton
- University of Cambridge
- Cardiff University

- Coventry University
- University of Oxford
- Sheffield Hallam University
- University of Sheffield
- University of Strathclyde

It is interesting to note that students submitted essays from a relatively small number of institutions, with an average of three students per institution. This is possibly due to the motivation of a few lecturers who encouraged their students. However essays were submitted from only 6 of the 24 institutions where academics had expressed a specific interest and volunteered to promote the competition. This suggests that the students themselves were more drawn to the competition at certain universities.

In 2004/05 there was a stronger response, with 43 submissions from engineering students at the following 16 institutions:

- University of Bristol
- University of Cambridge
- Cardiff University
- University of Central England in Birmingham
- Coventry University
- University of Durham
- University of Essex
- University of Exeter
- University of Glasgow
- Imperial College
- University of Liverpool
- University of Manchester
- University of Nottingham
- University of Oxford
- University of Strathclyde
- University of Wales Swansea

Judging in both years followed a similar procedure. Each essay was anonymously reviewed (in much the same manner as conference papers) by two reviewers. One reader was drawn from Subject Centre staff and the other from the Centre's Steering Group, which is made up of senior engineering academics and engineering educators from across the UK. Each reviewer read five or six papers. Each reviewer scored the essays in the following way:

- A. Essay deserves Engineering Subject Centre Student Award

- B. Essay at least deserves to reach the shortlist
 C. Essay not of sufficient quality to reach shortlist
 D. Unable to make decision

The results were used to draw up a shortlist. The Centre's Management Committee approved the shortlist and selected the winner. Judges were guided to ask the following questions when making their decision.

- Do you believe that the content of the essay answers the question well? The essay may be humorous or totally serious, relate to personal experience or be more general – however, use of a particular style may make you feel that it makes the essay particularly outstanding.
- What are your views on the essay structure and writing style, grammar, spelling etc? We obviously wish to publish something written to a high standard.
- Do you believe that the essay could ultimately be used to form the basis of a resource for the Subject Centre? For example, is the content of the essay constructive?
- Is the essay of sufficient quality (e.g. stands out from the crowd) to be worthy of national exposure and therefore a national award?

In both 2003/04 and 2004/05, 11 essays were shortlisted and published on the Centre's website where they are still available:

www.engsc.ac.uk/an/student_awards/archive

Some of the clear messages from the shortlisted essays together with selected extracts are presented below.

2003/04 – WHAT MAKES A GOOD ENGINEERING LECTURER?

There were some areas of clear consensus in the shortlisted essays. Virtually all refer to three characteristics: that a good engineering lecturer

- is enthusiastic
- gives clear, well-structured presentations
- uses real-world engineering examples backed up by industrial experience

A number of the essays specifically place enthusiasm (or passion) at the top of the list. John O'Brien, first year Engineering student from Cambridge and the eventual winner, says, *'Enthusiasm is the single most important trait that a lecturer can have . . . (It) will make the students listen, and it will make them want to learn.'*

Lecturers should be good speakers and speak with clarity. Lectures should be well structured. These points are made, sometimes briefly, in nearly all the shortlisted essays. A few point out that since students are expected to make presentations themselves they should see good examples from their lecturers. Adam Carins, first year Civil Engineering student at Coventry, says: *'good lecturers know that their lecturing style will be adopted by some of their students as a model, if not during their time at university then later in their engineering careers'*.

Use of practical real-life engineering applications and examples is widely valued. That lecturers should have industrial experience is also seen as important by many. Andrew Von Hirschberg, third year engineering student from Cambridge, points out that 'it is all too easy to spot a lecturer who has spent his whole life in education and merely conveys the bones of the subject matter without the flesh that real life would provide.'

It is significant to note therefore that the number of lecturers with industrial experience may be decreasing. In relation to UK civil engineering education for example, the Joint Board of Moderators (of the Institutions of Civil, and Structural, Engineers), in its Annual Report for 2003 (JBM[3]), expresses concern that there is 'pressure on departments to recruit new staff with a proven research record . . . [with the result that] suggestions in the recruitment process that new staff should have practical experience may be carrying insufficient weight'.

The full text of the 11 shortlisted essays is available on the Engineering Subject Centre website (address given above) where a fuller commentary on the content is also available.

2004/05 – WHAT MAKES THE BEST LEARNING EXPERIENCE FOR AN ENGINEERING STUDENT?

The 2003/04 essays had consistently placed emphasis on the role of a lecturer in delivering of lectures rather than in stimulating learning in other ways. Partly for that reason the 2004/05 title deliberately placed the emphasis on the student not the lecturer. Perhaps because the students were less comfortable writing about themselves than they were writing about other people, the 2004/05 essays tend to be less lively - certainly less entertaining - than the 2003/04 essays. Also, perhaps because there are more students than lecturers, or more learning styles than teaching styles, there is a less clear consensus in the 2004/05 essays. But each essay represents a valuable insight into the learning preferences of the writer.

Martin Stanley, fourth year Civil and Environmental Engineering student at Imperial College London and the eventual winner, states his preferences in this way: *'all engineering students need to be taught the theory behind whatever discipline they are studying. This should not be sacrificed in order to attract more students, to the detriment of future projects. However, in order that students can learn, as well as being taught, opportunities should be made available both within university and, where possible, in industry, for students to experience engineering at first hand. It is these experiences that have proved to be the best learning experiences for this civil engineering student.'*

The 2004/05 title was used by other subject centres within the HE Academy. In total 200 essays were received by 18 subject centres. The overall winner was Jessica Haglington, a second year student in the Department of Biological Sciences at the University of Exeter (HE Academy (4)). She summarises her ideal mix of learning experiences ('ingredients') as follows.

'Although quality ingredients are fundamental to a good learning experience, much more is needed to make a fantastic one. It is not merely the departmental resources or quality of teaching staff that makes a degree exceptional, but the extra touches of spice and individuality

that can personalise studies and make them relative to peoples' own experiences. As with life itself, a Biology degree needs to constantly evolve and adapt to meet the needs of its students. And like a good meal, it can completely awaken all of the senses. It can provide an enriching and fulfilling experience that just like a satisfying dinner, can provide enough intellectual sustenance for a memorable learning experience, and ultimately, a rewarding career.'

2005/06

The competition is being repeated in 2005/06, by the Engineering Subject Centre and by all other Subject Centres within the HE Academy. The title is 'How does your experience of your course compare with any expectations you may have had'. Again there will be a student winner within Engineering (and the other subjects), and a winner overall.

CONCLUSIONS

Through good promotion, and the enthusiasm of staff and students, some fascinating accounts of the student experience of engineering education are emerging from the student essay competitions run by the HE Academy Engineering Subject Centre.

A thorough judging process has ensured that the best of the essays are available as a valuable resource for engineering lecturers via the Centre's website. A commentary on the 2003/04 essays (on 'what makes a good engineering lecturer?') is also available on the website.

Participation in the Engineering Subject Centre competition increased significantly between 2003/04 and 2004/05, and the involvement of the other subject centres of the HE Academy in 2004/05 and 2005/06 means that the resulting resource will have even wider interest.

The Subject Centre is achieving its aims for the competition: creating a useful resource for engineering lecturers and increasing the involvement of engineering students with the Centre.

The shortlisted essays are well worth reading. They provide student feedback on engineering education given freely, with great enthusiasm, with more than a smattering of humour, and often with genuine warmth.

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