Improving Engineering students’ awareness of employability skills: A case study at Ulster University

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Introduction

Graduate employability is an increasingly important metric in Higher Education. Universities are expected to provide students with opportunities to develop the professional or ‘softer’ skills that graduate employers have identified as being so important. A particular challenge faced by course teams in the engineering discipline is how to encourage and enable students to take full advantage of the intra- and extra-curricular activities on offer that contribute towards their personal and professional development (Jones, 2015). Evidence suggests that undergraduate engineering students often undervalue the importance of developing these softer skills (Florman, 2007).

Engineering curricula tend to be already packed with numerically and technical subjects but the ‘industry-ready’ graduate needs an appropriate blend of the ‘hard’ and ‘soft’ skills. The aim of this study was to explore any changes in students’ attitudes towards how their employability skills were developed as a result of their experiences as undergraduate engineering students at Ulster University and to analyse their perceptions about what curriculum developers could do to further improve their employability prospects on graduation.

Objectives of the study

The principal objectives of the study were to:

• compare alignment of students’ views of what they believed employers want in a graduate engineer with what employers actually want as reported by the Royal Academy of Engineering (RAE, 2007)
• explore whether students’ understanding of what employers want changes as a result of their studies
• establish what students believe course teams should do to further enhance students’ employment prospects.

Methodology

A questionnaire comprising a mix of open and closed questions was administered to students on the Mechanical Engineering and Engineering Management courses. These courses were selected as they comprise the JACS (Joint Academic Coding of Subjects) Mechanical, Production and Manufacturing Engineering grouping at Ulster. First and final year cohorts were surveyed to identify any differences in their perceptions of their employability. 110 questionnaires were completed, approximately equal numbers returned by the first and final year. The quantitative data was analyzed using SPSS and qualitative responses were coded separately by the investigators and any differences in interpretation were resolved by agreement.

Results

Figure 1 illustrates the student responses analyzed by year of study and mapped against the six most important employability attributes valued by engineering employers as identified by the RAE. They also had a good appreciation of the value placed by general graduate employers on skills and capabilities such as self-management, communication skills and integrity as described by Archer and Davison (2008). Both first and final year students correctly recognized that the most important employability attribute of a graduate engineer is the ability to apply theoretical knowledge to real industrial problems. In general, first year student perceptions aligned well; final years tended to underestimate the importance of theoretical understanding and overestimate the value of team-work. Suggestions about what course teams could do to improve student employment prospects are summarised in Figure 2.

Conclusions

Students:

• have a good awareness of what engineering employers want from graduates
• believe that the industrial and practical aspects of their courses help their employability
• need to recognize and become actively engaged with Ulster’s existing centrally-available employability resources.

References


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