

THE EMPLOYABILITY SKILLS PROVISION WITHIN A CONSTRUCTION PROJECT MANAGEMENT DEGREE PROGRAMME

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This study was geared at assessing the employability skills provision within a construction project management degree programme through a questionnaire survey. Students were required to assess their level of ability in relation to the most common skills and competencies most sought after by construction project management graduate employers. The study identified team-working ability as the most sought after skill by the employers investigated followed by verbal communication, written communication and leadership ability. It was found that students were very confident of their ability in 12 of the 14 identified skills and competencies. But ironically, leadership, an important skill sought by employers is one that majority of the students felt most insecure in their ability. The study concludes that the BSc programme equips students with these employability skills and competencies, but more effort is needed to make the leadership development opportunities in the programme more conspicuous. With recommendations on how to achieve this proffered.

Keywords: graduate skills, graduate competencies, graduate employability.

INTRODUCTION

Graduate employability has always been in the spotlight, more so since the economic downturn of 2008 to 2010. At the height of the downturn, unemployment rate for 16 to 24 year olds was 20.7% (in March 2013) according to the Office for National Statistics (ONS) (McGuinness, 2013). The situation is even worse in the construction industry which seemed to have been impacted most by the resultant economic downturn. For example, the construction industry as a whole did not grow at all in 2009 and 2010 with a fall of 3.6% in 2012 and zero growth in 2013 (Construction Product Association (CPA), 2011). This resulted in very competitive job market for graduates entering the industry with companies becoming very selective in the calibre of graduates being recruited. This has made it ever so important for construction degrees programmes to equip graduates with not just the required technical ability but also the skills and competencies that will make them more employable in a crowded market. This study aims to improve the employability provision of the BSc Construction Project Management programme at Aston University by; (1) identifying the employability skills sought by leading employers of construction project management graduates; (2) unearthing the level of ability of the current final students in relation to these skills and competencies; and (3) evaluating how the BSc Construction Project Management curriculum at Aston University caters for these employability skills and how any identified deficiency might be improved.

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LITERATURE REVIEW

Research in the area of employability can broadly be categorised as (1) those on the role of higher institutions and other stakeholders in employability skills development; (2) perception of students in relation to employability; (3) what constitute employability skills and; (4) methods and models for successful development of employability skills in students. On the issue of the stakeholders involved in graduate employability, Tran (2015) highlighted that graduate employability depends on the relationship between higher education and the employment market and that efforts by universities will not work without the cooperation of related stakeholders such as employers. Speight *et al* (2012) found conflicted and confused views on employability among students, academics and employers. Academics were worried about the potential dilution of their discipline if integration of employability were imposed. But employers and students disagreed and believe that employability skills development should not be separate from the curriculum. This view by students is corroborated by Wilton (2008) who found that students greatly value the opportunity to apply the knowledge and skills acquired on their studies in a 'real world' environment. Ironically studies looking at the perception of students in relation to graduate employability are few and far between. The focus has mostly been on employers and higher institutions with often conflicting views. This led to Wilton (2008) arguing that the accounts of recent graduates should be the best source of dealing with the lack of consensus between academics and employers on how employability skills should be developed in higher education. Tymon (2013) also noted that graduates are increasingly aware that a degree on its own may not be enough and that they need additional skills and attributes for career success. Similarly, Jackson (2013) found that undergraduates place significant value on employability skills development in degree programmes, with the skills most valued by students being working effectively with others and communicating effectively.

From the above, it is apparent that students seem to think employability skills are synonymous to generic skills but opinions are diverse on what constitute employability. A view shared by Tymon (2013) who averred that the concept of employability is a multidimensional issue which cannot be easily defined. Hillage and Pollard (1998) defined employability as the capability of getting and keeping fulfilling work, and the ability to move self-sufficiently within the labour market. Yorke (2004) defined employability as a set of achievements, skills, understandings and personal attributes that makes graduates more likely to gain employment. Others have argued that employability involves more than skills. Bridgstock (2009) argued that employability is the ability of graduates to proactively navigate the world of work and self-manage the career building process. Similarly, Knight and Yorke (2002) posited that employability extends well beyond skills and is related to the concept of capability. On the theme of employability as capability, Arrowsmith *et al* (2011) argued that collectively, it is the sum of subject knowledge, technical competencies and personal attributes, assembled in appropriate ways, which define a graduate's employment capability. A number of studies have contributed to the area of employability skills development in students with a variety of approaches put forward. Recently, Kalfa and Taska (2015) argued that the traditional generic skill training is ineffective as it ignores the situated nature of learning. A conceptual framework of employability training that acknowledges the multiple contexts in which skills are acquired and transferred was therefore put forward. Earlier Fleming (2005) established that students who have undertaken cooperative education have a

competitive edge in the employment marketplace. While Cranmer (2006) posited that structured work experience and employer involvement in degree course design and delivery have positive effects on the success of employability skills training. Employer involvement also formed the crux of Tymon (2013) approach who recommended that promotion of work-based training and experience should be adopted for employability skills development. By far the most commonly recommended approach for successful employability skills training in higher education revolves around integrating employability skills development with the curriculum. However, this approach is fraught with a variety of nuances. Schaeper (2009) affirmed that although isolated, decontextualised standalone courses assist in acquiring key competencies, but they are less effective than integrated approaches. Similarly, Stoner and Milner (2010) suggest the need for educators to deploy strategies for building students' capacity to develop relevant skills across their whole degree experience. To underscore the perceived importance of integrating employability skills with the curriculum, Cranmer (2006) revealed that the embedding approach is more effective in developing employability skills than the bolt-on strategy. Specific techniques that have been recommended for integrating employability skills into curriculum include project-oriented classes which focuses around cross-disciplinary work (see Arrowsmith *et al*, 2011). Boahin and Hoffman (2013) also argued for competency-based training to be integrated together with technical competencies, while Kember and Leung (2005) are in favour of active learning because it has a strong effect on development of graduate capability.

RESEARCH METHOD

This study utilised an eclectic methodology consisting of both the qualitative and quantitative methodology. In carrying out the research, the first step involved investigation of target jobs, a graduate employment website and reviewing the job adverts of 10 leading employers of construction project management graduates in the UK. The skills required of graduates for their graduate trainee programme were then identified. Based on this a questionnaire was developed made up of three sections. The first section of the questionnaire was aimed at obtaining information on students' evaluation of their level of ability of the identified skills required by the leading construction project management graduate employers. There were 14 listed skills and competencies and a likert scale was used to ask the students to rate their level of ability in relation to these skills. In the second section of the questionnaire the students were asked to reflect on all the modules they have attended during the programme at Aston University and indicate which of them had equipped them with a particular competency and the specific activity, assignment etc. within the module that furnished them with the skills. The third section of the questionnaire was optional and asked students whether they had any ideas on activities they would like to see in the programme to equip them with the identified skills and competencies. The questionnaire was administered towards the end of the session to only the final year students as they were deemed the most appropriate to complete the questionnaire due to the fact that they are the only ones with experience of all the stages (years) of the BSc programme. The cohort was made up of 15 students, 11 questionnaires were returned representing a 73% response rate and all questionnaires were deemed suitable for analysis. Due to the small sample size a replica study was conducted two years later on a similar sized cohort to ascertain the reliability of the original study.

ANALYSIS AND DISCUSSION

As noted earlier, a content analysis of the adverts for graduate trainee programmes of 10 leading companies was conducted. Table 1 shows the outcome of this analysis. The next section discusses some of these leading skills.

Table 1 Leading skills and competencies in construction graduate job adverts

Skills and competencies	Number of graduate adverts requesting these skills and competencies
Team-working ability	8
Verbal communication	6
Written communication	6
Leadership ability	6
Flexibility	5
Problem solving skills	4
Initiative	4
Commercial and business awareness	4
Time management and meeting deadlines	4
Analytical skills	3
Drive	3
Self-motivation	3
Organisational skills/planning ahead	3
Creativity and innovation	3

Most Sought After Skills by Leading Employers of Construction Project Graduates

From table 1 it can be seen that the most sought after employability skills demanded by employers is team-working ability. This was demanded in the graduate job adverts of eight of the ten companies analysed. Although this is obviously an important competency in the workplace but it is even more important in an industry like the construction that requires contribution from various specialists. For example, in the construction of an infrastructure like a railway and associated stations, there will be the contribution of the civil engineer, the structural engineer, the cost consultant, the Architect, Land Surveying Engineer, Geotechnical Engineer etc. who will all work together to bring the project to fruition. Hence the ability to effectively work as part of a team is vital in this industry. Empirically, team-working has also been identified as one of the most sought after employability skills. For example, team-working skills was identified by Kreber (2006), Andrew and Higson (2008), Abraham and Karns (2009), Cumming (2010) etc. Communication skills both verbal and written emerged as one of the leading sought after skills by construction project management graduate employers. The reason for this is not far-fetched because as previously noted, construction is a multi-disciplinary and good verbal and written communication is important in order for graduates to be effective with the various professional they will be dealing with. Just like team-working, communication as an employability skill has been identified empirically as a leading skill normally demanded by employers across the world (see Pool and Sewell, 2007). Another leading employability skill worthy of

note is leadership ability, which featured in six of the ten graduate job adverts analysed. This skill is particularly important for graduates entering the construction industry because they are more than often tasked with some supervisory responsibilities early on in their career. Leadership was among the core skills launched in 1989 by the UK Secretary of State, Kenneth Barker in the call to include core skills in existing programmes (see Whitston, 1998).

The non-criticality of technical knowledge

It is important to point out that rather surprisingly; technical knowledge did not emerge as one of the most sought after skills by employers. This is despite the fact that construction project management is a technical discipline that requires an enormous amount of technical understanding of the domain. This situation seems to confirm the conclusion of Pool and Sewer (2007) that although employers want graduates with relevant subject specific (technical skills), they really value generic skills and competencies such as imagination/creativity, flexibility, willingness to work, working in team oral communication etc.

Final Year Students Perception of Their Level of Ability of the Most Sought After Skills

The next stage of the research asked the final year student to evaluate their level of ability in each of the identified most sought after skills. With students requested to rank their level of ability as either ‘exceptional ability’, ‘high ability’, ‘average ability’, ‘low ability’ and ‘no ability’. The responses were analysed and this is presented in table 2.

Table 2 Final Year Student’s Perception of their Ability

Skills and Competencies	Perceived Ability					Percentage that rated their ability as exceptional or high
	Exceptional	High	Average	Low	No ability	
Team-working	0	8	3	0	0	72.7%
Verbal Communication	1	7	3	0	0	72.7%
Written Communication	2	7	2	0	0	81.8%
Leadership	1	2	7	1	0	27.3%
Flexibility & Adaptability	3	5	3	0	0	72.7%
Problem Solving	1	5	3	2	0	54.5%
Initiative	1	7	1	2	0	72.7%
Commercial & Business Awareness	1	5	3	2	0	54.5%
Time Management and Meeting Deadlines	2	6	3		0	72.7%
Analytical Skills		10		1		90.9%
Drive	2	5	2	1	1	63.6%
Self-motivation	3	4	2	1	1	63.6%
Organisational Skills/Planning Ahead	1	5	4	1	0	54.5%
Creativity & Innovation	0	5	3	3	0	45.5%

The table above has been interpreted by categorising the results of the analysis of students’ responses into two groups. The first group is made up of skills and competencies where students perceive they have exceptional or high level of ability. Competencies were assigned to this category if more than 50% of the responses ranked a competency as either exceptional ability or high ability. The second category

includes skills and competencies where the students are not confident in their level of ability. Skills and competencies were assigned to this category if more than 50% of responses ranked a competency as either average ability, low ability or no ability.

Skills and competencies which students are most confident they possess

From table 2 above, the skill that most students are confident in their level of ability is analytical skill which 90.9% of students rated their level of ability as high. The reason for this was provided by responses to the second section of the questionnaire where most of the students indicated that all the modules of the programme have helped developed their analytical skill. The students revealed that that most of the modules course works, essays, reports or assignments have required them to utilise analytical skills. This resonates with literature; Boahin and Hoffman (2013) assert that higher institutions should integrate such employability skills, together with technical competencies in order to achieve the best results. Communication both written (81.8%) and verbal (72.7%) also emerged as skills students were confident of their ability. With all the modules again being pointed as having contributed to this capability through required written, group and/or individual presentation components. One final year student commented as follows: *“All modules undertaken so far have required the submission of work, and this has given the opportunity to develop written communication skill”*. This is not surprising because Wilton (2008) found that the most widely used skill in managerial employment was communication. While Tymon (2013) and Jackson (2013) both found communication as one of the most commonly cited skills and attributes valued by graduates.

Other skills student were very confident of their ability are flexibility/adaptability (72.7%) with students indicating that the nature of the BSc programme itself an enabler of this. This is due to the fact the degree programme is made up of a combination of subjects ranging from technical areas to commercial and business disciplines, geology and even economics. In the words of one of the students, *“the degree itself and the mixture of areas allows for flexibility in itself”*. 72.7% of the students were also confident they possess team working ability, while the same proportion was confident they possess initiative. Majority of the students believe that the use of assignment and coursework had helped them to develop this, as this usually involve using their initiative to plan, research and produce their independent or group assignments and working together in groups. In addition to the course works and assignment the final year independent project work was also indicated by students as instrumental in helping the development of their initiative ability. This is no surprise because the final year project would require students to follow a line of enquiry for their selected topic, develop their objectives and plan their work incorporating various forms of data collection methods to enable them achieve these objectives.

Skills and competencies which students think they are deficient in

The study revealed that students consider themselves deficient in only two areas; these are Creativity/Innovation and leadership. Creativity less so, as 45.5% of students indicated that they have a high level of ability, hence a borderline rating. The rating for leadership on the other hand is a alarming as only three students assessed their leadership ability as being high or exceptional. Most students (72%) judged their leadership ability as being average or low. This is rather concerning in light of the fact that as can be seen in table 1, leadership is one of the leading competencies sought by construction project graduate employers. When students were asked to indicate the activities within the modules that might have helped them develop their

leadership ability, there was usually no dedicated leadership activity indicated apart from the rare reference to being group leader during team exercises. This reinforces the argument of Jackson (2013) who asserted that employers' expectations are not being met in students' possession of generic skills like decision making and leadership. Paradoxically, the study shows that students would like leadership development opportunities within the programme. Their perception is that more could be done to increase the leadership development opportunity within the programme. For example one student commented as follows; *“None (of the modules) really spoke about the art of a leader other than Human Resources Management.”*

Improving the leadership provision within the degree programme

This study has uncovered that students perceive that the construction degree programme is equipping them with nearly all the most sought after skills by graduate employers apart from one of the most important ones - leadership. Analysis of the programme reveals that the programme is abound with leadership development opportunities. For example there are team, group and project-based tasks all through the programme. According to Arrowsmith *et al* (2011) problem based learning and project oriented classes are some of the high impact approaches used to successfully integrate employability skills into curriculum. It has also been argued that through teamwork a number of generic skills are developed including leadership (see Kalfa and Taska, 2015). Additionally, the programme also has a one year work-placement. Work placements have been lauded as one of the most successful means of developing employability skills including leadership. Research by Wilton (2008) indicates that graduates who completed a work placement are almost universally positive about the benefits of having done so. So why are students not confident in their leadership ability and feel there are not enough leadership development opportunities integrated in the programme despite this being the opposite? The answer to this question lies in the literature. Firstly, the concept of overt curriculum (Tymon, 2013), needs to be embraced in relation to leadership skill development. Tymon (2013) found that skills can be developed and are embedded in the curriculum through a number of activities and programmes but if students are not aware of the benefits of these programmes they would usually not engage with these activities. Hence, educators need to make skills development activities more overt. As individual benefits were clearly the main reason why students thought employability mattered. The implication of this for Aston University Construction Project Management Degree is that the outcomes of the programmes (e.g. work placement and project-based work) should make explicit the generic skills and competencies e.g. leadership they have been designed to enhance and not just the technical skills. This will ensure that student dedicatedly strive to develop the generic skills when participating in such activities and tasks.

Additionally, it is not just sufficient to make the curriculum overt, gaining student buy-in to employability skill development is also crucial if it is to be successful (Jackson, 2013). One of the reasons for this according to Jackson (2013) is to ensure effective learning as research suggests that effective learning requires a clear understanding of the value of presented material and associated activities. One of the key ways students buy-in can be gained especially for the work-placement year is to include employability skills and not just technical skills in the learning agreement established at the outset. A self-appraisal of the various employability skills should be conducted by the students and this should be discussed with the tutor, with plans formulated on how the student should seek to develop the agreed ones during the placement year. The placement report, which currently evidences mainly the technical

and managerial experience gained during the placement year, should also now report and evidence how the student felt they have developed the employability skills agreed at the outset. Wilton (1998) argues that key skills relating to personal relationship encompassing a competency like leadership should be integrated into the curriculum. Additionally, since there are already many group tasks and activities from various modules of the programme, students should be required to lead a group so that all students have led their peers in completing a group task at least once during every academic year. This will also incorporate self-assessment of leadership ability before and after the exercise. To augment this, as part of the programme, students should be required to compile a leadership development portfolio every year. This would involve students preparing a reflective report on the leadership style(s) they adopted on the group work they have led in the year, justification of this and reflection on effectiveness.

Alleviating the small sample used - the issue of generalisation and reliability

This is an action research aimed at reflective practice and improving the current employability skills provision of the author's affiliated institution hence why the sample was based on a cohort of the degree programme. This small size is reflective of the usual cohort size of the final year. However, critiques would argue that although the author's hand might be tied in relation to the number of respondents utilised, the generalisation of the findings is questionable. The author does not seek to generalise this research to construction programmes of other universities, but it would be interesting to ascertain if the findings can be generalised to final year cohorts of the construction programme at the same university for any given year. That is, if not widely generalisable, is this study reliable? To ascertain this, the same questionnaire was administered to a subsequent final year cohort two years after the original study.

Results of replica study conducted on a separate cohort of students two years later

The size of the cohort was 13 students and the questionnaire was administered via email as previous. A total of 10 questionnaires were returned representing a 76.9% response rate and all questionnaires were deemed suitable for analysis. Analysis of this set of questionnaire revealed similar results to the previous cohort. Just like the previous cohort students were confident of their ability in 12 of the 14 skills and competencies such as team working (90%), written communication (90%), verbal communication (70%), flexibility and adaptability (70%), problem solving (70%), initiative (80%), commercial and business awareness (70%), time management (80%), drive (80%), self-motivation (100%) organisation and planning (100%). Furthermore, just like the previous survey, leadership emerged as a competency students were not confident they possess as 50% of them perceive their leadership ability as average. This is very similar to the previous survey and further confirms that the leadership skills development provision of the degree programme needs to be improved.

CONCLUSIONS AND RECOMMENDATIONS

This paper has investigated the employability skills most sought after by construction project management graduate employers and a total of 14 skills were found as the leading skills and competencies. Team-working was the most sought after skill with verbal communication, written communication, leadership ability and flexibility not too far behind. The study found that most students were confident of their level of ability in most of the skills and competencies with more than 50% of students indicating a high or exceptional ability for 12 of the 14 identified skills and competencies. Skills like analytical ability, written and verbal communication skills,

team-working ability, flexibility and adaptability received a resounding endorsement from students in terms of their level of ability. But rather surprisingly and concerning, leadership was the skill that majority of the students were most insecure of their ability with a whopping 72% of students indicating an average or low leadership ability level. However, the study highlighted that the construction project management degree programme had abundance of activities and programmes which provide leadership employability development skills, such as a one year work-placement. But students do not seem to realise or embrace these as leadership development opportunities. To improve the situation the study drew on two concepts in literature (overt curriculum and student buy-in) as important ways of making the leadership skill development opportunities more efficacious. This will be augmented by compulsory hands on leadership culminating in the compilation of a reflective leadership portfolio all through the programme. Finally, a more elaborate research that will utilise a bigger sample is recommended since this study is limited in that a small population was used as constrained by the small size of the cohort, therefore making these findings difficult to generalise. The use of a larger sample will yield more insights and lend itself more to generalisation.

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