

MODE OF STUDY INFLUENCES BUILT ENVIRONMENT STUDENTS' PERCEPTION OF THEIR PROFESSIONAL DEVELOPMENT

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Accredited undergraduate courses in construction disciplines are designed to help students develop knowledge and skills to prepare them for professional practice. However, it is recognised that undergraduates are not always as prepared for professional practice as might be desired. The aim of this paper is to examine undergraduates' perceptions regarding how effectively their course prepares them for industry. Students tend, in their academic studies, to focus on assessment, and feedback on assessment has been recognised as an important learning support. Built environment undergraduates at a post-1992 university complete a short paper-based questionnaire at the mid-point of each semester regarding their academic progress and support they may value. This Likert-scaled questionnaire contains 12 statements, plus two free-text questions. Analysis of completed questionnaires reveals mode of study - part-time or full-time - influences student perceptions of their learning experience and its appropriateness to support development of professional practice skills and knowledge. This suggests there may be an opportunity to fine-tune pedagogic practice in order to more effectively support development of undergraduates' professional knowledge and skills.

Keywords: learning, part-time, professionalism, undergraduates, education

INTRODUCTION

One important function of Higher Education (HE) is to provide skilled graduates who effectively meet the needs of industry and thus contribute to a healthy economy (Leitch 2006). Employers value academic qualifications, and express a desire for undergraduate curricula to reflect their professional practice needs (Hoxley and Wilkinson 2006). However, academic qualifications are not necessarily a guide to professional competence. The Confederation of British Industry finds employers make 80% of any recruitment decision on the basis of perceived soft skills (CBI 2007). Therefore, given an important function of HE is preparing graduates for industry, Higher Education Institutions (HEIs) should consider how they help students develop their soft or employability skills (Bates and Kaye 2014).

One of the authors of this paper is currently undertaking a doctoral study that focuses on the professional skill development of built environment undergraduates. This paper reports part of that study, a doctoral 'work in progress'.

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Students express concern for how their course will prepare them for their professional life (Voss, Gruber and Szmigin 2007). In particular, their concern is with employment opportunities (Kandiko and Mawer 2013). To this end, students value practice-based longitudinal assessment (Bates, *et al.*, 2013). The learning goals of undergraduates and of employers converge around academic knowledge and development of professional practice skills. Yet it appears there is some divergence between desire and practice, as 65% of employers want HEIs to be better at developing undergraduates' employability skills (CBI 2012). This highlights the value of developing students professional practice skills as well as their academic knowledge. But delivering this presents some dilemmas and challenges for HEIs.

The aim of this paper is to examine undergraduates' perceptions at the mid-point of a semester regarding how effectively their course is preparing them for professional practice, and whether assessment and feedback effectively support their learning. The objectives of this paper are first to explore key issues through a literature review, and second to analyse student evaluations of their learning experience.

This study was undertaken at a post-1992 university. In the case of built environment courses, more than half of students study part-time. They attend university one day per week, spending the remaining four days per week employed in professional practice, whereas full-time students' classes are distributed across the week and many of these students have limited or no industrial experience. All but one of these courses are professionally accredited, and students on the non-accredited course often ultimately seek to progress to an accredited one.

THEORETICAL PERSPECTIVES

Accountability in Higher Education

In order to promote public accountability of HEIs and help prospective students make informed choices (HEFCE 2016), final year undergraduates evaluate various aspects of their learning experience through the National Student Survey (NSS), results of which are publically available. From this data, some weaknesses in built environment students' experience are apparent. More than other undergraduates, built environment undergraduates evaluate feedback to help clarify things they did not understand as the weakest part of their academic experience. Across all courses overall satisfaction is approximately 64% for feedback, whereas for construction management courses this figure is 53% (Lamond, Proverbs and Wood 2013). Built environment undergraduates also express concern regarding personal development, acquiring confidence and being intellectually challenged in their course (Lamond, Proverbs and Wood 2013). This is reflected in a concern some built environment employers express - graduates often lack employability skills (Rawlins and Marasini 2011). Thus, it appears that built environment undergraduates and employers have concerns that are not well addressed.

Built environment courses are designed to provide "skills and knowledge for a career in the global construction industry" (The Chartered Institute of Building 2016). However, a clear problem exists, to develop students' knowledge and skills as effectively as desired. This is all the more surprising, given that the curricula are designed taking into account the needs of industry and are approved by professional bodies. Understanding how best to meet undergraduates' learning needs may potentially be enhanced by the reflective practice of tutors, taking into account the changing needs of different groups of students and the mutable professional environment (Schön 1991).

Part-Time Study in Higher Education

Studying in HE on a part-time basis has been recognised as valuable. It offers opportunities to those who might otherwise find it difficult to engage in formal education (Department for Business, Innovation and Skills 2011). Part-time HE contributes to social mobility and offers access to professions which for some groups might otherwise be difficult to obtain (HEFCW 2014). In 2015/16 there were 540,285 part-time students in the UK (Universities UK 2016), which represents almost one quarter of HE students. This is particularly interesting, given that HE offers the opportunity of enhanced earnings and also non-pecuniary advantages such as status (Blanden, *et al.*, 2010). Further, part-time HE offers learners the opportunity to develop knowledge and skills that are valuable in their employment (Bertram, Mthiyane and Mukeredzi 2013; Callender and Little 2015). Students studying on a part-time basis and employed in practice have experience of benefits and challenges of the workplace, which offers additional opportunities for learning. Indeed, such employment provides students that are pragmatist or activist learners an opportunity to learn in a style of their preference (Honey and Mumford 1992), and provides a context for learning (Shaw and Ogilvie 2010).

Part-time students bring professional experience to their formal learning, whilst full-time students do not possess this experience. Built environment students tend to prefer learning by doing (Crabtree 2014). For part-time students this may represent an advantage in so far as they are learning at work. But it also raises questions as to how this learning may be developed to enhance students' knowledge and skills. However, the undergraduate curriculum is similar for all students. Little regard is given to the professional practice experience that part-time students bring to their formal learning; nor is thought given to how this experience may be developed (Bertram, Mthiyane and Mukeredzi 2013). Indeed, part-time learners sometimes experience a tension between their employment and their course (Gibbs, Jones and Oosthuizen 2013). Reflective practice offers students opportunity to improve (Argyris and Schön 1996) and may be one route to enhance learning.

Supporting Learners

There exist difficulties for learners both with and without experience of professional practice (Hasson, McKenna and Keeney 2013). It is important to offer a learning experience that meets the needs of all learners in HE, regardless of their professional experience. Given that students focus in particular on assessment, providing assessment that is authentic to professional practice is valuable as a means to develop their professional knowledge and skills. However, real world conditions can be difficult to recreate (Ashford-Rowe, Herrington and Brown 2014). This illustrates some of the challenges facing built environment tutors as they seek to provide all undergraduates with an effective learning experience.

To develop students' learning, assessment feedback is also recognised as valuable (Hyatt, 2005) and should be integral to teaching (Hattie and Timperley 2007). The Quality Assurance Agency for Higher Education (QAA 2012) identify assessment feedback as playing an essential part in enhancing learning. Indeed, Eraut (2004) argues feedback is the most important contributor to learning, although it needs to be of a high quality to be effective (Sadler 1998). This paper contends that feedback tailored to mode of study could help students' academic learning and develop their professional practice skills.

METHOD

Data were gathered during March 2017, which is the mid-point of the semester, at a post-1992 university. Within built environment, 569 undergraduates study part-time (59%) and 391 full-time at this university. This is in contrast to both the University and Faculty within which the Department sits, each of which have approximately 17% part-time students.

Built environment students are invited to complete a paper-based questionnaire at the mid-point of each semester regarding their academic progress on the modules they study. Although the questionnaire was not designed specifically for research, it is standardised across all modules offered by the Department and provides an opportunity to collect consistent responses from students. Because participants had to opt-in to the use of their responses for this study, there may have been some self-selection in the sampling, but this could not be quantified and is unlikely to have resulted in significant bias for the comparisons made here. This questionnaire contains 12 statements using a four-point Likert scale for responses - definitely agree, agree, disagree and definitely disagree. Likert scales have the advantage of being practical (Harland, Dawkin and Martin 2015), and such questionnaires can be relatively quick and easy to implement and analyse. There are also two free-text questions at the end of the questionnaire, and these are to identify what students most like about a module and what tutors can do to help them with any areas of concern. The questionnaire also inquired whether students are attending university on a part-time or full-time basis.

For the Department, the purpose of this questionnaire is two-fold. First, it allows tutors to identify any problems at an early enough stage so as to be able to undertake remedial action should it be required and to see whether students have any specific issues that could be resolved. Second, it is intended to encourage students to reflect on the progress of their learning, and identify any support that would benefit them. Tutors read the completed forms and respond if there are issues that need addressing, noting also those things that students value. The questionnaire is regarded as a helpful tool in providing information which is then used to ensure that students' learning needs are effectively met. This student questionnaire is deemed informal and is not part of the formal university mechanism to gauge student perceptions of their learning experience, although the value of such questionnaires has been recognised (Vohmann, *et al.*, 2015).

Ethical approval to undertake the research had already been secured using the University protocols. In addition, to protect participants, the questionnaire is anonymous and participants were asked to tick a box at the top of the questionnaire to confirm they were happy for their return to be included in anonymized research data. Tutors voluntarily provided their students' completed questionnaires for inclusion in this research. All returns were anonymous, the researcher had no information regarding which students or tutors had participated.

Of 266 questionnaires returned to the researcher, 87 had not 'opted-in' to the research, and so these were excluded from the data analysis. Not all respondents answered the question regarding their mode of study, and so these were also excluded from the analysis. It was considered that, as asking whether the student was studying on a part-time or full-time basis was new, the form could benefit from modification to add clarity here. This left a total of 101 returns that were included in the study. This paper uses student responses to three of the 12 statements, plus the two free-text questions. Questionnaires were analysed quantitatively, counting responses for each statement. The Mann-Whitney U-test was used to test for significance of difference in response between the full-time and part-time

students, and Cronbach's alpha coefficient of internal consistency was calculated for the same data. Both analyses were undertaken using SPSS (Gray 2014). The free text comments were analysed using thematic analysis which is considered flexible (Braun and Clarke 2006) and appropriate for analysis of such data.

FINDINGS AND DISCUSSION

Findings

It must first be noted that the overwhelming majority of students evaluated their learning experience positively. That the courses under study provide an effective learning experience is well established, for example in external examiner reports and continued professional body recognition. This work is concerned to examine students' perception of part of that experience in order to inform and develop pedagogic practice.

Checking for consistency, Cronbach's alpha coefficient of reliability was calculated as 0.985. This is considered within the acceptable limit of reliability (Gozum and Hacıhasanoglu 2009).

In response to the statement 'I understand how this module links with employment as a professional in the built environment' there was a difference in strength of feeling of response between full-time and part-time students (Table 1).

Table 1: Proportional responses to the statement "I understand how this module links with employment as a professional in the built environment" from full-time and part-time students, with the Mann-Whitney U-test for significance of difference between the two groups

	Definitely agree	Agree	Disagree	Definitely disagree
Full-time student (n=34) *	74%	26%	0%	0%
Part-time student (n=67)	40%	58%	2%	0%

* n = number of responses for this group

Part-time students were more likely to evaluate this as agree rather than definitely agree. Full-time students were more likely to evaluate this as definitely agree that their learning experience linked with employment as a professional in the built environment. Very few students disagreed and none definitely disagreed with the statement, indicating that almost all students could recognise links between their academic study and professional practice. There was a statistically significant difference in strength of feeling in responses between the two modes of study (Table 1).

In response to the statement 'The assessment develops my knowledge / skills', part-time students were again more likely to evaluate this as agree rather than definitely agree (Table 2). Full-time students were more likely to 'definitely agree' with the statement. No full-time students disagreed or definitely disagreed. The difference in responses between the two groups were again significant (Table 2).

Table 2: Proportional responses to the statement "The assessment develops my professional knowledge / skills" from full-time and part-time students, with the Mann-Whitney U-test for significance of difference between the two groups

	Definitely agree	Agree	Disagree	Definitely disagree
Full-time student (n=33)	55%	45%	0%	0%
Part-time student (n=67)	27%	63%	10%	0%

Mann-Whitney U = 814 p < 0.01

It is possible that the difference may have arisen because full-time students had little or no professional experience from which to draw, and so their expectations were different from those of part-time students. The full-time students may have had a more acute awareness of their professional knowledge and skills development. In other words they were learning about new things which they had not previously encountered.

Not all students responded to the statement 'feedback has helped clarify things I did not understand', instead leaving this part of the questionnaire blank. Of those students who did respond, a number of students disagreed or definitely disagreed with the statement (Table 3). No other statement received such strong negative responses, and again part-time students were less inclined to agree overall (Table 3).

Table 3: Proportional responses to the statement "Feedback has helped clarify things I did not understand" from full-time and part-time students, with the Mann-Whitney U-test for significance of difference between the two groups

	Definitely agree	Agree	Disagree	Definitely disagree
Full-time student (n=33)	43%	33%	21%	3%
Part-time student (n=63)	11%	48%	36%	5%

Mann-Whitney U = 748 p < 0.01

In response to the free-text question 'what do you most like about the module?' part-time students frequently commented on the extent to which their academic learning related to their work, in particular regarding those things they found valuable. For full-time students there was little such recognition. They wrote about pedagogic and timetabling aspects of their module; for example, 'breaks up the lectures' was apparently considered a positive feature.

Few students answered the question 'How can module staff help you with any areas of concern or improve the module?' Of those that did, there was some reference to receiving more professional practice guidance or information, and this was more frequently made by part-time students, which is perhaps counter-intuitive. Students from both modes of study expressed concern regarding particular aspects of their learning experience - clarity regarding the detail of assessment requirements, understanding coursework criteria, and receiving feedback.

Discussion

Findings above suggest that, interestingly, mode of study was an important factor in students' perceptions of their development of professional knowledge and skills. This

was statistically significant. Mode of study may have consequences for students' perceptions of what is valuable to support their learning and what is less effective. In turn, this should inform pedagogic practice. Such perceptions of what is appropriate may be shaped by students' own professional experience. It is possible that part-time students, with their professional experience, are more demanding in respect of development of professional knowledge and skills in their formal learning. However, their own professional experience may not necessarily reflect the wider industry nor develop broader skills that profit graduates' careers and industry needs. Full-time undergraduates, without industrial experience, may be less critical of their formal learning as they have nothing with which to compare it, or knowledge or expectations of what might be appropriate to help their learning.

It is also possible that curriculum design or pedagogic practice, or both, may, perhaps, be skewed towards one or other group of students. This is a point that requires further investigation.

Potentially, students may conflate education and training, not appreciating the distinction between the two. Students may perceive higher education as courses that enable them to be more proficient in their day-to-day employment tasks, but do not recognise the value of broader aspects for their professional development.

It was interesting to note the slightly smaller number of responses to the question regarding feedback (Table 3). Different conceptions of feedback, ranging from promoting learning to critique of the final submission (Evans 2013), may also affect students' ability to comment on it. Some of these students who responded had an unfavourable evaluation of feedback by the mid-point of the semester. These evaluations of feedback indicate an opportunity to enhance pedagogic practice. Either students do not recognise feedback or tutors make insufficient use of feedback as a pedagogic device, each of these being rather unsatisfactory, as feedback is considered important to help learning (Hattie and Timperley 2007). Given that feedback on performance is usually "the most important factor in learning" (Eraut 2004: 803), feedback has an especially important pedagogic role to play. Learning from reflection (Schön 1991), with feedback as integral to this, is a valuable yet perhaps under-used device.

It is also interesting to observe that full-time students expressed less dissatisfaction with feedback than the part-time students. Reasons for this difference in response between the modes of study are unclear. Possibly part-time students may be more critical, anticipating that formal HE study will offer them new perspectives on their own practice or they may expect feedback to align with their own professional practice. Nevertheless, the depth of feeling and difference between the two groups in response to this question was unexpected and further investigation of this finding considered necessary.

CONCLUSIONS

These findings suggest that there is opportunity to enhance the student learning experience. It seems that there may be different learning needs of part-time and full-time students. This may necessitate finding solutions to the different learning needs of students with these different modes of study, since employment as a built environment professional seems to have some bearing on student perception of their academic learning.

Although based on a relatively small sample, and findings should be treated with caution, this paper nevertheless suggests there is scope for further research. This study has shown that students' perception of their learning experience may be shaped by their mode of

study. There is also scope to examine how tutors can enhance the feedback aspect of their practice earlier in the semester for students' benefit, and also to explore how students could recognise and benefit from this.

Developing students' knowledge and skills through a more tailored pedagogic approach has potential to enhance the efficacy of built environment HE courses. Although it is recognised that students perceive they are developing appropriate knowledge and skills, nevertheless there seems to be the potential to enhance this. To further develop their learning and development as effective practitioners, students with different modes of study may benefit from tutors deployment of revised pedagogic approaches.

One key role of HE is to provide industry with effective practitioners (Leitch 2006). Indeed, employers value academic qualifications but also want graduates to possess appropriate professional skills (Hoxley and Wilkinson 2006). This paper suggests there may be scope to enhance students' learning experience by tailoring it to suit their particular needs associated with mode of study, rather than taking a one-size-fits-all approach. In view of the need for HEIs to be as efficient and effective as possible in the current uncertain economic and political climate, this paper suggests a challenge and an opportunity.

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