

GOAL DISPLACEMENT AMONG CONSTRUCTION STUDENTS IN HIGHER EDUCATION

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The value of the human resources, upon which the construction industry depends, lies partly in the knowledge and skills those human resources have. Such assets can be developed through education and learning. However, theory suggests that in general students in higher education do not necessarily focus their effort on learning as much as possible. Instead their focus is on strategies that will allow them to gain maximum marks in order to get a 'good' degree, but potentially at the expense of their educational development. Literature also discusses the idea that where organizational activities are bureaucratically controlled, goal displacement can occur. This is where the rules designed to reach a goal become more important than the goal itself, potentially at the expense of achieving the original goal. This study was a preliminary investigation into the possibility of goal displacement among higher education construction students. Thirty nine students, consisting of undergraduates and postgraduates, were asked to describe what they hoped to gain from their time studying at university. It was found that the three categories of responses referred to most often, and in order of priority, related to getting a degree, having improved job prospects and gaining subject specific knowledge. Although this pattern emerged in both the undergraduate and postgraduate students, it was found that the hierarchy of categories was much more clearly defined amongst the undergraduates. In the case of the postgraduates, their responses were more varied, and also included a proliferation of references to gaining general life experience. It is suggested that undergraduate and postgraduate construction students take different attitudes to their higher education experience, perhaps because postgraduate students are less susceptible to the bureaucratic aspects of the higher education system, and this in turn impacts their learning and eventual value when they join the construction industry.

Keywords: bureaucracy, goal displacement, higher education, learning.

INTRODUCTION

The construction industry needs personnel with the knowledge and skills necessary to solve the challenges and problems faced by the industry. The Institution of Civil Engineers has highlighted that these must include the art of analysis and synthesis (Oliver 2007). Higher education institutions involved in the field are tasked with equipping their graduates with such attributes (Lam 2008) in order that they may enter the construction industry as valuable assets who can contribute to the betterment of the industry, its working methods and its products. In order to maximize the benefits of higher education to the construction industry it is necessary to ensure that those working their way through the system are given the opportunity to develop the relevant knowledge and skills to the best of their ability.

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Educational aims

There are different views on the fundamental aim of education. In an early discussion on the principles of curriculum design Tyler (1949) discusses both the sociological perspective, where the purpose of education is to help people to deal with the specific problems they will encounter in their future lives, and the philosophical perspective, where education is a way of passing on basic life values to the next generation. Warwick (1974), in a more recent analysis, views education as serving the changing requirements of society, where the value of specialized knowledge has superseded that of a holistic education. Here education is about the transmission of knowledge, skills and values for the benefit of society as a whole and the individual's role in industry. The purpose of education can also be seen as equipping the student not with complete knowledge but with the ability to access relevant information when necessary. Boyd (2006) addresses the importance not of what a person knows, but how they handle knowledge, and in particular gaps in knowledge. Indeed, Scott (1995) proposes that, as well as developing competence, whether academic or technical, university education also provides students, necessarily, with provisional or half-formed knowledge in order that the students become critical thinkers.

Although relevant educational aims are important, their fulfilment does not only rely on the input of educational institutions. Biggs (2003) notes that 'what people construct from a learning encounter depends on their motives and intentions'. In an educational situation it is not enough for the educator to devise and promote an appropriate aim. The student must have a desire to achieve that aim as well. If a student is intrinsically interested in understanding the subject matter and approaches the concepts holistically, they are not only more likely to retain such knowledge for a longer period of time, but they are also more likely to be able to use the knowledge that they have gained along with future experiences to construct new knowledge themselves. This is known as a 'deep approach' to learning (Biggs 2003). This can be contrasted with the opposite situation where a student is more interested in being able to retain the necessary discrete facts relevant to the subject matter for a sufficient amount of time to allow them to pass an exam. This is known as a 'surface approach' to learning (Biggs 2003). In this case the student is not only likely to forget what they have learnt more quickly than in the previous case, but they are also unlikely to be able to see how the discrete facts fit together and unlikely to be able to construct new knowledge based on what they have learnt. Additionally, in a discussion on the influence of the educational environment on the student Bloxham and Boyd (2007) note that students value more highly assessment activities that they perceive to have worth beyond simply completing the required task. The student's own motivations are important, and in order that an educational aim is achieved the students working towards that aim must subscribe to it.

The educational environment

Students undertake learning activities within a context and while learning are influenced by issues other than just those designed by an educational institution for the purposes of reaching an educational aim. Warwick (1974) describes a set of subcultures, or socially constructed ideas, which determine the norms and values upheld by not only the educational institution, but also professionals in the field, the student's peers and the wider community. These issues contribute to the educational environment in which the student studies. As is discussed later, educational institutions also exist within a societal context (Warwick 1974) and their activities will also be influenced by such values.

The public has expectations regarding the standards produced by its institutions, and the need to satisfy such expectations leads to the adoption of bureaucratic administration and assessment (Warwick 1974 and Biggs 2003). In addition, the facilitation of mass access to university education, with its currency of credits and outputs, increases pressure for tighter control and more prescriptive quality assurance (Scott 1995). Although standardized assessment based on specialized knowledge is beneficial from an administrative perspective, as it is readily quantifiable and comparable, it has been noted that such measurement of achievement is not necessarily consistent with the more realistic ability to use professional judgement (Boyd 2006). Also institutionalizing learning in this way has the potential to alienate students through the loss of ownership of their learning (Biggs 2003). Indeed, in a discussion on effective assessment strategies (Bloxham and Boyd 2007) it was noted that the student's perception is a contributing factor to the unique interaction between themselves and the learning situation, and they will adjust their activities to correspond with the 'hidden curriculum' – what the student believes is required to successfully negotiate the education system. In addition, although it has been demonstrated that students appreciate that the ability to adapt and use knowledge is a good measure of understanding (Biggs 2003), when it comes to assessment the students' focus will be directed towards what is necessary to do well in the exam (Biggs 2003 and Boyd 2006).

As well as having expectations over standards, the wider societal context surrounding educational institutions influences the specific results of education that are deemed to be desirable. These expectations vary with time, as a result of changing socio-economic circumstances external to the academic system, and influence the design of the university curriculum (Scott 1995). In addition, the students themselves, also influenced by the socio-economic environment, have their own expectations regarding the outcome of university education. Lam (2008) notes that in Hong Kong students demand curriculum value in terms of future earnings and, in response to decreasing levels of low-skilled jobs, workers return to university to upgrade their skills and academic certification in order to fulfil the demands of higher skilled jobs. Neither the students nor the institutions in which they study exist as isolated entities, and consequently they respond to external pressures.

Bureaucracy and behaviour

Bureaucratic methodologies were designed in order to combat nepotism, personal subjugation and subjective judgement, promoting fairness in the work environment (Collingwood 1996). This required the explicit classification of activities and roles in order that they may be appropriately matched to fulfil a required function. In addition, a bureaucratic approach facilitates, and necessitates, the measurement or monitoring of the qualities of part of a system in order to demonstrate its overall value. Such methods of measurement and control are well suited to situations where task continuity exists; where those who administer the rules and monitor behaviour have a clear understanding of the rules, and reasoning behind them (McAuley Duberley and Johnson 2006), and such activities lend themselves to quantitative evaluation. However, when it comes to more qualitative activities which result in more arbitrary outcomes, rather than clear outputs, the bureaucratic style of evaluation becomes more difficult to implement and demonstration of a quality outcome tends to be based on the more measurable characteristics of the contributing processes and procedures (Herrbach 2005). While summing the measurement of the parts may give an indication of the whole, there is a danger that those seeking to demonstrate quality

will turn their attention to improving the discretely measured parts of the system, disregarding the quality of the system's outcome (Herrbach 2005; Bohte and Meier 2000 and Collingwood 1996). Merton (1940) describes this as goal displacement. In terms of rules designed to govern behaviour Merton (1940) describes how an effective bureaucracy requires strict adherence to rules and a reliability of response, and that such devotion to rules transforms them into absolutes where they are no longer conceived of as relative to a particular purpose. He goes on to argue that such sanctification of the rules leaves them less open to adaptation, as may be necessary in changing circumstances or situations not envisaged by the authors of the rules, and so potentially disruptive to the achievement of the goal the rules were originally designed to facilitate. Rules that were once correct may become incorrect and have a negative impact on the desired outcomes.

Bureaucratic principles feed into the professions which students intend to join. Warwick (1974) describes how bureaucratization; the recognition of a skill, and professionalization; the claim for recognized competence in the performance of a skill, can be used by professionals to legitimize their status in a society and in the profession itself. Expanding bureaucratization has made experts and specialized knowledge more desirable, encouraging the view of knowledge as existing in isolated, separate subject systems (Warwick 1974). In addition to this, and perhaps as a result of it, industry generally views specialized knowledge as a valuable asset to be collected up and used as professional currency. In this sense quantity is valued over quality, and gaps in collected knowledge are perceived as weaknesses in this competitive environment (Boyd 2006). If an individual's attitude to their occupation is influenced by the demands placed upon their occupational role (Merton 1940), it is perhaps not surprising that an honours degree has a normative power, transcending curricular context (Scott 1995), and attainment of the necessary quotas of knowledge for its achievement is the focus of many students. Interestingly, Boyd (2006) suggests that postgraduate students, being more educationally aware, are better able to engage in educational activities which do not solely rely on the attainment of discrete packets of knowledge but relate to their socially situated setting as well.

Beyond bureaucracy

With reliance placed on bureaucratic structures to control various aspects of society, including education, it is possible to develop a fear that a lack of compliance with 'the rules' would lead to the breakdown of order to the detriment of those relying on the rules. However, taking a less prescriptive approach to control and evaluation may improve the quality of the system outcomes (Bohte and Meier 2000 and Herrbach 2005). An investigation into the compromises made by professional auditors in their work concluded that, rather than such action being dysfunctional, it was a valuable and necessary skill to be able to use professional judgement to determine when not to follow the rules, to adjust activity to work constraints in order to make valid evaluations of quality (Herrbach 2005). Equally in a study into organizational cheating, which found that evaluating agencies' performance based on outputs, rather than outcomes, combined with limited agency resources, led to the agencies focussing on how to manipulate quantitative measurements to demonstrate (false) quality, concluded that taking a more holistic approach to evaluation, while more difficult to implement, should be less likely to displace goals (Bohte and Meier 2000). Relaxing prescriptive expectations surrounding the performance of components of a system may give rise to improving the quality of the performance of the system as a whole.

RESEARCH PROBLEM

The way students approach learning in higher education is influenced by the environment in which they study and their own perceptions of it. If this in turn has an impact on what and how students learn, then an appreciation of the students' perceptions may yield clues as to if, or how, the student learning experience can be improved. Such improvements may help students to gain more from their higher education, and therefore increase their eventual value to the construction industry.

The aim of this research was to carry out a preliminary investigation to identify the motivation behind the pursuit of higher education by students in the Civil Engineering department at the University of Portsmouth, and to see whether the drivers identified correspond with desirable educational aims, or are related more to wider environmental issues.

In order to achieve the aim, the following objectives were pursued.

- To determine what students in the Civil Engineering Department at the University of Portsmouth believe is the purpose of their higher education; and
- To analyse the content of the student responses to see if any patterns emerge.

METHODS EMPLOYED

In order to identify the motivations of construction students for pursuing their higher education data was sought which consisted of student descriptions. The students were asked to respond to the following statement on a blank piece of paper.

“What I hope to gain from my time studying at Portsmouth.”

The students were given the freedom to write whatever, however and as much, or as little, as they felt necessary. The purpose of the simple statement and open data collection technique was to minimize the effect of the research tool on the subject responses, so that the students would be free to raise anything they deemed relevant, and only the things they deemed relevant. In order to maximize the response rate the students were asked to produce and submit their responses during the first 15 minutes of a class they were attending. In addition to their written responses the students were also asked to provide their student registration numbers in order that the researcher would be able to differentiate between students on different courses. The students involved in this study were those present in classes taught by the researcher on the day of the data collection. The sample consisted of 25 third year undergraduate students in one class and 14 MSc level postgraduate students in another.

The content of the responses was analysed by categorizing the students' statements according to their common themes. The frequency with which each gain category was raised, and the order in which the categories were mentioned, was recorded. Although the students were not specifically asked to make prioritized lists, such priorities were inferred from the order in which the different categories were raised; issues at the forefront of a student's mind will be raised first.

This preliminary study was concerned with identifying the dominant drivers which account for the students' desire to undertake higher education as viewed by the students themselves. For this reason, and since the sample of students was small and relatively homogeneous (very male-dominated and similar ages), the study did not consider variables such as age and gender.

RESULTS AND DISCUSSION

Most students chose to write a list as their response to the statement, although some did respond more prosaically and one student responded with a diagram. All responses submitted were valid and able to be categorized. The students referred to a wide, although fairly predictable, range of gain categories in their statements. Table 1 shows the gain categories distilled from the student responses and the frequency with which they were raised. Figure 1 shows how often the top three gain categories by frequency (degree, job prospects and subject specific knowledge) were raised in the first five statements made by the students in their responses.

Table 1: Gain categories and frequencies: all student responses

Category	Frequency	Category	Frequency
Degree	29	Contacts	3
Job Prospects	22	Achievement	2
Subject Specific Knowledge	21	Better Life	2
Life Experience	17	Confidence	2
Knowledge	11	Education	2
General Professional Skills	10	Money	2
Friends	8	Share Knowledge	2
Enjoyment	6	Subject Specific Skills	2
Learn English	5	Take Advantage of Opportunity	2
Social Life	5	Aid Career Choice	1
Learning Skills	4	Critical Analysis Skills	1
Life Skills	4	Independence	1
Personal Development	4	Own Business	1
Promotion	4		

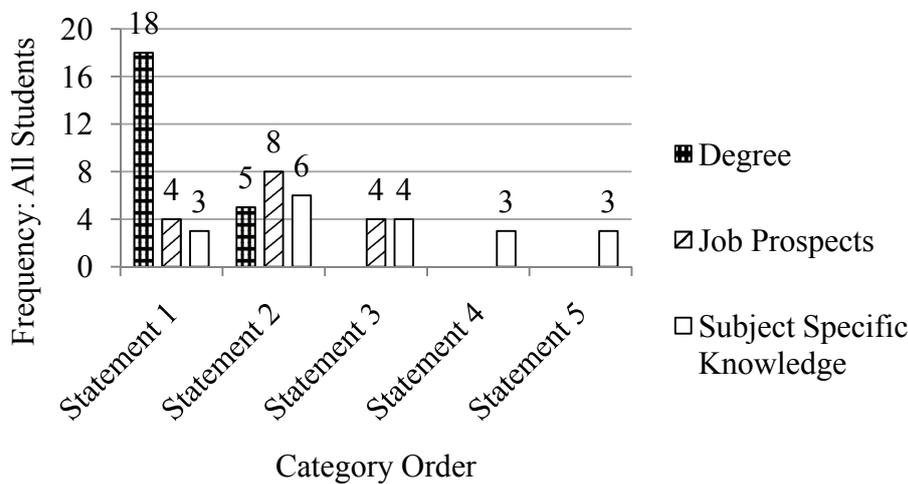


Figure 1: Order in which top three gain categories were raised

- The gain category most frequently referred to by all students was a degree, followed by job prospects and subject specific knowledge.
- The gain category a degree was raised mostly as the first or second statement made by the students.
- The gain category job prospects was raised a lot in the first three statements made by the students.

- The gain category subject specific knowledge was spread more evenly throughout the order of the statements made by the students.

Table 2 and Table 3 show the gain categories referred to, and the frequency with which they were raised, by the postgraduate student cohort and undergraduate student cohort respectively.

Table 2: Gain categories and frequencies: postgraduate student responses

Category	Frequency	Category	Frequency
Life Experience	11	Personal Development	3
Job Prospects	10	Achievement	2
Degree	9	Education	2
Subject Specific Knowledge	8	Take Advantage of Opportunity	2
Knowledge	7	Learning Skills	1
General Professional Skills	6	Life Skills	1
Friends	4	Share Knowledge	1
Learn English	3	Social Life	1

Table 3: Gain categories and frequencies: undergraduate student responses

Category	Frequency	Category	Frequency
Degree	20	Life Skills	3
Subject Specific Knowledge	13	Better Life	2
Job Prospects	12	Confidence	2
Enjoyment	6	Learn English	2
Life Experience	6	Money	2
Friends	4	Subject Specific Skills	2
General Professional Skills	4	Aid Career Choice	1
Knowledge	4	Critical Analysis Skills	1
Promotion	4	Independence	1
Social Life	4	Own Business	1
Contacts	3	Personal Development	1
Learning Skills	3	Share Knowledge	1

- Contrary to the undergraduate students the gain category most frequently referred to by the postgraduate students was life experience, followed by job prospects, then a degree, and then subject specific knowledge.

Figure 2 and Figure 3 show the frequency with which the top three gain categories were raised in the first five statements made by the postgraduate student cohort and the undergraduate student cohort respectively.

- The general gain category pattern observed for the postgraduate students followed a similar pattern to that for all the students. Where the gain category a degree was raised in the first five statements it was raised either first or second; where the gain category job prospects was raised in the first five statements it was spread between the first three statements; and where the gain category subject specific knowledge was raised in the first five statements it was raised in the second or later statements.

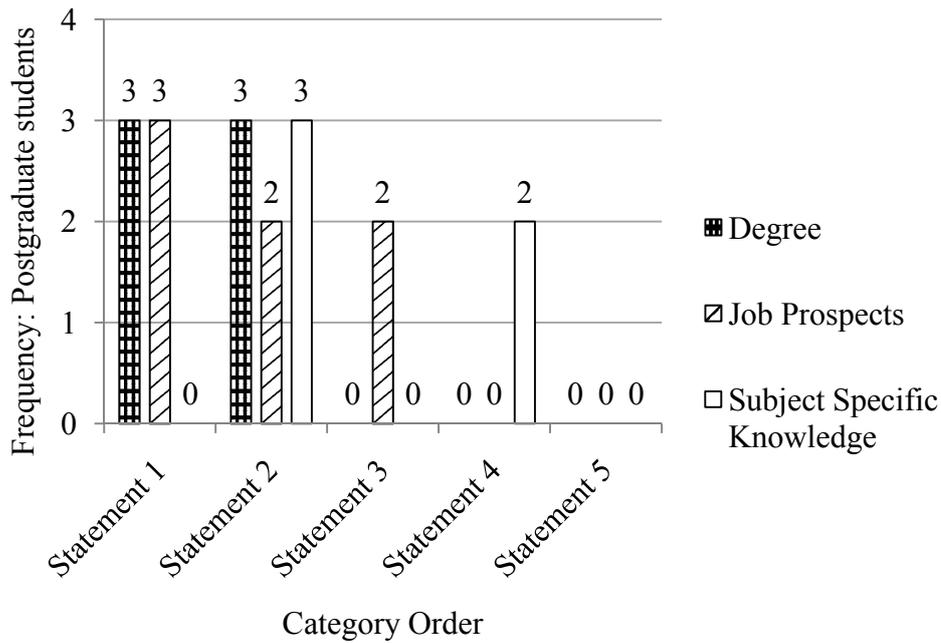


Figure 2: Frequency of gain categories raised by postgraduate students in the order raised

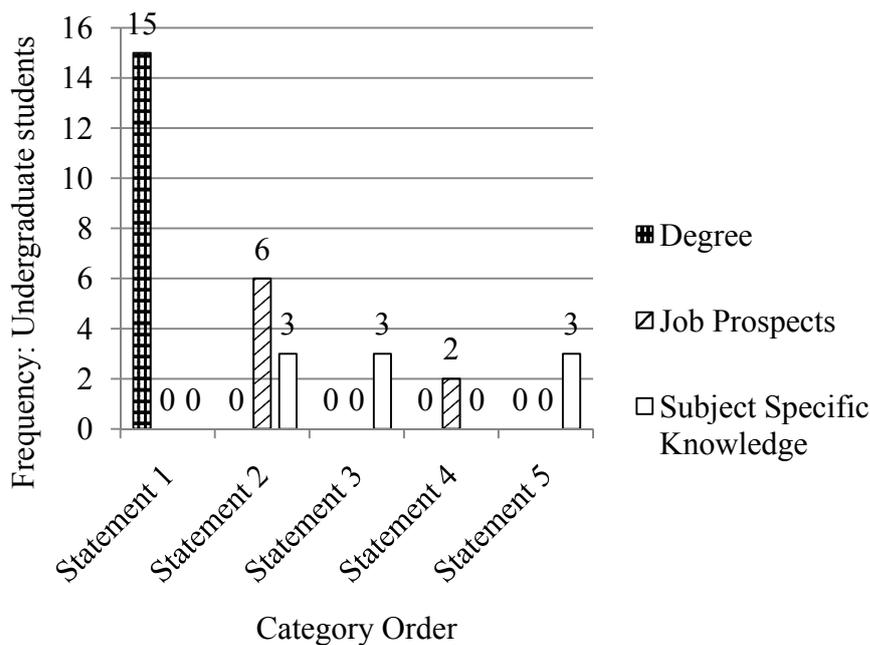


Figure 3: Frequency of gain categories raised by undergraduate students in the order raised

- The general gain category pattern observed for all students above was much more defined in the undergraduate student responses. Where the gain category a degree was raised in the first five statements it was always raised first; where the gain category job prospects was raised in the first five statements it was concentrated in the second statement; and where the gain category subject specific knowledge was raised in the first five statements it was more evenly spread through the later statements.

These results indicate that in general the students that participated in this study view their higher education as a means to attain a degree first, improve their job prospects second and gain knowledge specific to their subject area third. The manner in which these categories are prioritized suggests that the students, in particular the undergraduates, see the product of higher education as a degree certificate that will legitimize their claim to a better job, rather than as evidence of improved knowledge and understanding as a result of learning in higher education. This is consistent with the views of the Hong Kong students studied by Lam (2008) discussed earlier and the assertion of Boyd (2006) that knowledge is viewed as a collectable asset of value in a competitive work environment. The reference to subject specific knowledge, although evident, came lower on the list of priorities, suggesting that the students appreciate the value of gaining knowledge relevant to their subject area, but would not choose to pursue this if it was at the expense of gaining a degree qualification. This may indicate that these students are inclined to adopt the previously described surface approach to learning (Biggs 2003).

This study is based on a small, localized sample of students, so the results are not generalizable, but the pattern that has emerged hints that there are some underlying issues worthy of noting. It is suggested that the environment in which these students study has an influence on their perception of the purpose of their higher education, which in turn directs their learning activities. The importance of the student's perception in their choice of learning activities was discussed previously (Bloxham and Boyd 2007 and Biggs 2003). The students seem to focus more on the quantitative products and rewards of higher education rather than the more qualitative goals of learning and developing understanding, and it is suggested that the bureaucratic aspects of the higher education and wider societal systems, as discussed above (Biggs 2003; Scott 1995 and Warwick 1974), with their requirements for objectively measurable justifications, has contributed to this. In addition, the earlier assertion of Boyd (2006) that postgraduate students take a different approach to their learning compared with undergraduate students seems to be supported here. When the postgraduate student responses are compared with those of the undergraduate students it becomes apparent that there is a difference in the priorities of the two groups. The postgraduate students seem to be much more interested in gaining general life experience while at university, and their hierarchical pattern of priorities, while generally consistent with the undergraduate students, is not so clearly defined. The postgraduate students are comparatively more focussed on the more qualitative goals in higher education of learning and developing understanding, and it is suggested that bureaucratic influences from the environment in which they study has less of an effect than it does on undergraduate students. This may be because there is a greater likelihood that postgraduate students will have reflected on their previous undergraduate education, possibly in the light of experience working in the construction industry.

CONCLUSION

The compartmentalized evaluation of quality as required by a bureaucratic methodology has the potential to encourage those seeking to comply with the system to focus more on the value of the separate parts than the quality of the whole. There appears to be a chain of influence which determines what is legitimate, starting in wider society, through professionals into educational institutions, and then into the students themselves, which relies on bureaucratic methods for justification. If, as is suggested above, a student's perception of what is important affects how they learn,

such a learning environment will have a tendency to restrict the values that the students hold and the way they internalize and manipulate knowledge. Since the students in this study seem to be more interested in the quantitative rewards of higher education (a degree and good job prospects), it suggests that they are missing out on the holistic significance of their education. This may pass an educational burden on to the construction industry as a whole, as it will be when such students encounter real industry problems that their real learning will begin and guidance may be needed. A less bureaucratic learning environment has the potential to improve this situation, and it may be worth higher education institutions investigating the acceptability of learning without the necessity of the quantitative evaluation which can restrict the students' own educational goals.

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