

Researching our students for more effective university teaching

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Abstract

In order to provide efficient and effective education it is essential that teachers understand their students as learners. With small class sizes informal means may be sufficient; however, the current climate in Higher Education is rightly promoting greater participation and student diversity, leading to larger and less homogeneous classes since there have been no concomitant increase in resources. Therefore, more formalised means to understand students as learners may be required. One strategy to facilitate this would be survey methods. These could be employed to enable teachers to understand students' expectations of teaching, learning and assessment; their conceptions of learning; their epistemological beliefs; and their reflective thinking abilities. Insights from such surveys may enable teachers to construct more effective learning environments for their many and diverse students.

Keywords: Profile information; empirical research; expectations; confidence

Introduction

It is necessary to know and understand new students because effective education depends, in part, on teachers being able to establish a two-way learning dialogue (Laurillard, 1993; Scott, 1999). Large class sizes usually prevent the application of strategies familiar to classroom teachers, which can facilitate understanding students' starting points in the current phase of education. At the same time, greater student diversity makes it more imperative that teachers understand not just the knowledge and skill base of their students at point of entry, but also the students as learners. In short, teachers need to understand students' conceptions and perceptions of learning.

To understand students as learners, this paper will start, in the first section, "Higher education today", by considering relevant background factors. Then, in the second section, "University teaching today", it is argued that, against the backdrop of lower resources and greater student diversity, especially in the new university sector, greater demands are being made on universities to provide challenging and effective learning environments for students. Graduates are expected to have a range of skills to enable them to perform more effectively in the workplace, thus producing greater "value for money" for higher education funding. Essentially, more may well be expected from a more diverse student body whilst greater efficiency is being expected from universities (Eurydice, 2000).

One possible way of meeting this challenge is described in the third section, "Finding out more about students", with particular focus on survey methodologies for large student groups. This argument is underpinned by empirical research on university students, which suggests that this is a profitable strategy.

1. Higher education today

Higher education is changing across the whole of Europe (Field, 2002). There has been a substantial increase in the number of school leavers continuing their education at university level motivated by a shift from production-based to knowledge-based societies and to promote the social stability characteristic of prosperous and peaceful nations (Eurydice, 2000).

Participation in Higher Education (HE) in the UK has increased to a situation where more than 40% of school leavers are taking up a university education compared to only 15% a

decade ago (Biggs, 1999). Davis (2003) and Winn (2002) provide a useful overview of the changes in the UK HE sector. Likewise, in Spain student enrolment at universities has doubled from 1983/4 to 2001/2 (Ministerio de Educación, Cultura y Deporte, España), but higher education expenditures in Spain are still below the average for OECD countries (Mora, 1999).

In the UK, if the increase in student numbers had been matched by similar increases in teacher numbers and other necessary resources, then class sizes and teacher workloads would have stayed the same. The National Association for Teachers in Further and Higher Education (Natfhe), one of the two major trades unions supporting academic teachers in the UK, has highlighted the problems that arise in HE from recruiting more students and a more varied range of students, without adequately resourcing them (Natfhe, internet reference). Whilst the class size debate in schools is concerned with keeping class size below 20 (Bell, 1998; Hart, 1999), Natfhe expresses concern that if lecture classes grow to 200 or more students, there is little chance of follow up discussion or individual help (Natfhe, page 2). Inequality in funding across the HE sector further compounds the problem. The new Higher Education Institutes (HEIs) teach over 50% of the UK university students. They take 33% of their students from lower social classes in comparison with 19% from the old HEIs, but receive only one fifth of the funding per student (page 4). Increased social diversity of students happens most in universities that have lower overall funding per students. Those universities also recruit more from under-represented social, age and ethnic strata. Those students are more likely to need extra support that may be harder to give in large class sizes.

Similarly, in Spain the diversity of the student body has been growing (Ministerio de Educación, Cultura y Deporte, España) as it has across Europe. The political motive for diversifying the student population is that providing higher educational opportunities for all leads to both social cohesion and cultural advancement. Also, a highly skilled workforce is a prerequisite for sustaining competitiveness in a global market (Eurydice, 2000).

Higher education now costs many students and their families substantial sums of money. There are many consequences of this financial squeeze, including part-time work (and thus part-time study?) amongst students, along with the reasonable expectation that this expensive education should offer value for money. The net effect of this is that higher education has seemingly been reframed as a service with students as paying customers (Hill, 1995; Scott, 1999; Thorne and Cuthbert, 1996).

2. University teaching today

The current situation is that universities, especially new universities, now have more diverse student populations. The diversity of the student population is also a Europe-wide phenomenon (Eurydice, 2000). Students are more likely to see themselves as consumers of an educational provision, more directly linked to future employment, through an increase in vocational courses (Northedge, 2003). At the same time, universities are required to consider the quality of the learning environments they provide for their students (Eurydice, 2000). To consider effectiveness and efficiency of university teaching and student learning, some outcome measures are required, one of which has been the development of an articulated account of “graduateness” in the UK system (HEQC, 1995). One of the properties of “graduateness” is being an independent learner. Whilst this is not a new or original outcome of university education, attention on the process of turning new undergraduates into independent or autonomous learners is.

To ensure the greatest possible likelihood of graduates being independent learners, universities have considered the learning experiences that are created for their students. Effective learning environments that promote independence are thought to be those that (UWIC, internet reference):

- Are *student centred* as opposed to being teacher centred.
- Promote a *deep approach to learning*, by requiring the student to actively engage with the subject.
- Require students to be *actively* working with the subject, rather than passively sitting and listening to “an expert” talking about it.
- Encourage students to *reflect* upon their learning, to learn from what has gone well and consider what has not worked so well.
- Are *inclusive* of all students by providing teaching methods and learning environments that reach all students.

To foster students as independent learners, specific learning / teaching strategies have been developed such as Problem Based Learning (Schwartz, Mennin and Webb, 2001). Also, there has been an increase in the use of strategies such as Personal Development Planning

(Learning Teaching Support Network, 2002) and greater study advice is available for students.

These, though, are new initiatives, not traditional university teaching methods. To what extent do the customary teaching methods foster student independence in learning? Brown (1993) makes it clear that teaching methods can be considered as lying on a continuum from being high in *teacher* participation and control to high in *student* participation and control. A formal lecture is a good example of a teaching method that is high in teacher participation and control. Conversely, student presentations are a teaching method that is high in student participation and control.

The lecture may have survived in higher education because it is relatively easy to prepare and deliver and, given that just the top 15% of school leavers were entering higher education, it was sufficiently effective for those academically bright, interested, committed and motivated students who were recruited. Now that the number of academically less able and perhaps initially less committed students is increasing, passive and un-engaging lectures may be ineffective and do little to promote independent learning in students, although they can, of course, be “enriched” (Biggs, 1999) for greater effectiveness.

With the gradueness project, more is now being expected of the greater number of more diverse university students than just subject specific skills and knowledge. It follows from the gradueness remit that targeted and supportive teaching will be required to meet the inclusivity remit.

3. Finding out more about students

To provide supportive and targeted teaching that will promote gradueness, teachers need to know something about their students. Specifically, teachers need to know not just about students’ subject knowledge but also about students’ conceptions and perceptions of teaching and learning. Experience suggests that teaching small, school-sized classes, on a frequent basis, makes that relatively easy and it often happens implicitly, but how can teachers find out about students in a class of one or two hundred?

There are at least three possibilities. Firstly, the traditional methods of personal tutor systems and teaching students in small tutorial groups can be employed, to the extent that teacher workloads and other resources permit (Maunder and Harrop, 2003).

A second method depends on the increasingly widespread use of virtual learning environments, which can also facilitate engaging with and finding out about students in large classes through their discussion boards and through email communication (Jolliffe, Ritter, and Stevens, 2001).

A third method would be to use survey tools to build up a picture of the strengths and weaknesses of a particular student cohort. Admittedly, this will not provide the same detail that individual discourse in the traditional classroom will provide, but it may be sufficient. Students could be surveyed in induction week to provide information, for instance, on their: Learning styles (Biggs, Kember & Leung 2001); Reflective thinking (Kember et al, 2000; Leung & Kember, 2003) and; Epistemological beliefs (Clarebout et al, 2002; Schommer, 1990, 1998). Students' expectations could also be sought (Maunder & Harrop, 2003).

Sander et al (2000) surveyed new university students for their expectations of teaching, assessment and perceptions of a good teacher. The findings on students' expectations and preferences for different teaching methods are summarised in table 1. The study itself is outlined in Box 1.

Table 1: Ranked and mean ranked students' views about university teaching methods

	Expected teaching		Hoped for teaching		Not wanted teaching	
Rank	Teaching method	Mean Rank	Teaching method	Mean Rank	Teaching method	Mean Rank
1 st	Formal lecture	1.69	Interactive lecture	1.77	Role Play	1.09
2 nd	Interactive lecture	1.30	Student Centred Teaching	0.91	Formal lecture	0.96
3 rd	Tutorial	0.74	Tutorial	0.88	Presentations	0.86

Table 1 shows that students are expecting interactive lectures second to formal lectures. The interactive lecture came top in the list of teaching methods hoped for. The preference for the interactive lecture could be because this is a familiar teaching method for students, from their school days. Also, it may be a teaching method that accords with the stu-

dents' beliefs about knowledge and learning. If so, there may be a way to go about turning such students into autonomous learners.

It is likely that there will be a link between students' preference for particular teaching / learning environments, their epistemological beliefs and their conceptions of learning (e.g. Leung & Kember, 2003). Students with a belief in knowledge as fixed and absolute may well prefer a lecture format, which enables them to be "given" the knowledge by an "expert" teacher. For these students, a formal lecture would work only for as long as the lecture could be followed. If the lecture became interactive, allowing students to ask the lecturer to slow down, repeat what has just been said or to keep the slide up for longer, it would suit their preferences. The student with a belief in knowledge as fixed and absolute would perhaps cope much less well in a learning environment in which students were asked to work together to research topics and share the expertise that they gained from their research (e.g. Sander, 2002). From this, it follows that students who expect to be "given" knowledge, which can then be learnt and reproduced, will have difficulties in a learning environment that does not give them knowledge. Likewise, students who seek to gain new understandings of a topic through working with problems and issues may not be helped in a lecture setting.

Worryingly, table 1 suggests some mismatches in students' expectations. For instance, students are expecting formal lectures but do not want them, nor do they want to give presentations yet many courses require them. Such mismatches are worrying because they are likely to lead to inefficient or ineffective teaching and maybe disillusioned and disengaged students (Mann, 2001).

If it is known that students have expectations that are out of line with what a university has to offer, either specifically, in terms of teaching or learning, or in relation to more general campus issues, then these mismatches can be addressed in one of two ways. Either the expectations could be managed, to bring them into line with what the university or course offers (e.g. Hill, 1995) or they could be responded to by changing what is on offer to match what the students are expecting (e.g. Stevenson, Sander & Naylor, 1996, 1997). However, changing what is on offer to accord with student expectations does not mean that students always have to be given what they want. For instance, students find presentations daunting (Sander & Stevenson, 2002; Stevenson & Sander, 2002) but they may be beneficial (Sander, Sanders & Stevenson, 2002). Box 2 outlines some recent research findings on the effects of student presentations.

Box 1: University Students Expectations of University (Sander, Stevenson, King & Coates, 2000)

This study used a specially designed questionnaire (The USET questionnaire) to explore undergraduate students' expectations and preferences of teaching, learning and assessment. A convenience sample of 395 first year university undergraduates was used at the start of their university life. They were enrolled on a Medical, Business Studies, or Psychology degree course at one of three British universities. One of the universities was a new university in South Wales. The other two were traditional universities in the East Midlands. The average A level points at entry was 27.8 for the medical students, 22.5 for the business studies students and 15.0 for the psychology students. Not all students came with A levels, though.

Summary statistics across all 395 respondents were computed by assigning a score of 3 to the most highly ranked selection, then 2, 1 and 0 for an item that wasn't selected. From these descending ranks, means and standard deviations were calculated over all 395 data points. The top three for each of teaching methods expected, hoped for and not wanted are shown in table 1.

Overall, the similarities in expectations and preferences between the three groups were greater than the differences. Specifically, the students expected to be taught by formal and interactive lectures but preferred to be taught by interactive lectures and group based activities. Their least favoured learning methods were formal lecture, role play and student presentations. Course-work assessment preference was for essays, research projects and problems / exercises. Although there was an overall preference slightly in favour of coursework assessment rather than exams, this was not consistent across all three centres. It may have been that the students were identifying those assessment methods that they were familiar with. Students, asked to rate various qualities of a good teacher, selected "teaching skill", followed by "approachability" as the most important.

It would be interesting to include virtual learning environments in the survey and see what students' views are about this increasingly prevalent form of teaching, which is "here to stay" (Hartley, 1998, p105).

Stevenson, Sander and Naylor (1996), in a piece of action research, showed that more effective tutorials could be created for students on a distance learning degree course by gathering survey information about the students' teaching and learning preferences. These preferences were used to structure a tutorial programme that progressed from a didactic style, which the students had indicated they preferred to participative and facilitatory workshops that employed disliked teaching methods like student role-play and student presentations. Students were supported when teaching methods that the survey had shown to be disliked were used. Evaluations of the tutorial programme suggested that the re-designed programme had pleased

more of the students more of the time and had also been effective in helping the students make the transition to becoming independent learners. Thus students can come to benefit from and to value teaching methods that initially they did not prefer. The recognition of students' dislike of, for example, student presentations and the support of students through presentations is an example of teachers "connecting" with students.

Box 2: Giving presentations: the impact on students (Sander & Sanders, submitted)

Research has shown that students do not like student presentations, yet a case can be made for them (Sander, Sanders and Stevenson, 2002). This study seeks to understand the effects that presentations have on students.

Within an action research framework and using a 2x2 factorial design, two studies were completed, one with students undertaking assessed presentations the other with those doing non-assessed presentations. Factor 1 was time: beginning and end of semester; Factor 2 was condition: pre or post presentation. All respondents completed the Academic Behavioural Confidence (ABC) scale and the Views on Teaching, Learning and Assessment (VTLA) questionnaire at both time points.

Students who had undertaken assessed presentations showed an overall increase in ABC, ($p < 0.05$). No such increase was found after the non-assessed presentation. In both studies students showed significant increases in their responses to items on the ABC that related to public speaking, ($p < 0.05$).

The VTLA revealed that experiencing presentations as a teaching method can help students feel more positive about them and able to acknowledge benefits of presenting. It also confirmed that students find presentations daunting and some have some concerns about learning from peers.

The different responses in the two studies may have been influenced by the way that presentations were integrated into modules at different levels. However, it would seem that the experience of presentations can raise student confidence in their own abilities although it is less likely to change their views of the prospect of presenting.

The study is outlined in box 3.

Box 3: Student Perceptions of the Tutor's Role in Distance Learning (Stevenson, Sander & Naylor, 1996)

This action research was carried out by a group of tutors teaching the same Open University psychology course in the same region, but at different centres, but with occasional, common Day Schools. The research aimed to explore the expectations that these distance learners had of their occasional tutorials. It is argued that this information is helpful in developing an understanding of the tutor-learner relationship and its interaction with the learning process.

The research team designed a two-pronged investigation to establish student expectations. Ten students were interviewed in depth using an agreed interview schedule whilst 94 students were provided with a similar set of open-ended questions as a postal questionnaire. The interview and questionnaire data was collected before the first Day School meeting for all students. At the end of the course the students were surveyed by interview and through postal questionnaires, for their evaluation of the tutorial programme.

The data showed that:

Students liked

- A mixture of teaching methods
- Definite aims and targets
- Advanced notice / programme
- Encouraging feedback on assignments
- Exam preparation opportunities

Students disliked

- Group work that gets nowhere
- Being picked on to answer a question
- Being marked too leniently
- Pedantic spelling and grammar corrections
- Vague, general comments on assignments

Students would like

- Tutors to come prepared
- A well-delivered lecture with opportunity for questions
- Tutors to be encouraging and supportive
- Tutors to have humour and dialogue in marking
- Day Schools to be well planned and useful to justify the effort in attending

The study shows that knowledge of what students expect can provide teachers with the opportunity to think about how their teaching strategies might need adapting to work more effectively, especially if they are markedly different from their students' expectations.

Thus, despite a possibly encroaching customer culture, higher education does not have always to meet the expectations of students (Scott, 1999). What is paramount is the design of effective learning environments, which is not necessarily easy (Clarebout, Elen, Johnson, & Shaw, 2002; Clarebout, Lowyck & Elen, 2003; Elen & Clarebout, 2002). As Shuell (1986) says: “If students are to learn desired outcomes in a reasonably effective manner, then the teacher’s fundamental task is to get students to engage in learning activities that are likely to result in their achieving those outcomes” (page 429). Understanding and working with students’ expectations is fundamental in getting students to engage in learning activities.

The construct “Academic Confidence” is being used to try and understand some of the differences in teaching and learning preferences that students have (Sander & Sanders, 2003, see box 4). Measures of academic confidence have shown that confidence decreases over the first year of university study and does so the most for those students who predict that they are likely to do less well than others in their group. There are many possible explanations for this drop in academic confidence. One is that students come into university with high hopes and expectations only to find them dashed by an alien environment very unlike the one they had experienced at school. Maybe these students found an environment that: (1) taught them in an impersonal way, maybe even in large, formal lectures; (2) had limited and maybe difficult access to teaching staff, and (3) provided slow and limited feedback on assignments and exams.

Box 4: Measuring Confidence in Academic Study: A Summary Report (Sander & Sanders, 2003)

Guided by the work of Bandura on self-efficacy, this study sought to determine the extent to which differences in students' expectations of higher education could be explained by differing levels of confidence.

An Academic Confidence Scale (ACS) was constructed and used for a survey of level one students, to explore differences in confidence between two very different student groups. One group was further tested for their confidence later in the year and at the same time; they completed a Ladder of Aspiration (LofAsp), to validate the Academic Confidence Scale. With these data, the ACS could be explored further for underlying factors.

Factor analysis of the ACS yielded six factors (Studying, Understanding, Verbalising, Clarifying, Attendance and Grades). The LofAsp provided validation of the ACS. From the LofAsp, a small group that rated themselves lower than the national average was identified. This group was interesting, both in terms of ACS scores and academic performance. ACS scores showed a significant reduction over time.

The comparison in ACS between the two student groups suggests that confidence could only be responsible, to a small extent, for differences in students' expectations of higher education. The reduction in ACS scores indicates that academic confidence is affected by student performance, rather than affects student performance. The data also raises questions about students' ability to reason with statistical data as well as their views on their likely performance on their course.

Concluding remarks

This paper has advocated a case for trying to understand students' at the beginning of their university education. As Cassidy and Eachus (2000) conclude, "profile information...is both beneficial to inform teaching practice and students to raise awareness regarding learning strategies and study skills" (p318). Profile information collected at the beginning of a university course could provide a known and clearly understood starting position, from which learning environments can be designed. There is a need to recognise that school leavers are likely to need working with (Laurillard, 1993; Northedge, 2003; Scott, 1999) to give them skills and confidence in their skills, to become independent, reflective, deep, active learners. The transition from school or college to university, places many demands on undergraduates (Chemers, Hu & Garcia, 2001; Cook & Leckey, 1999; Delaney, 2002; Lawrence, 2001; Lowe & Cook, 2003) and the culture that university students find themselves in can make it difficult for many of them, especially those from backgrounds that are less traditionally associated with access to higher education, to effectively begin to study for a degree.

Increased student numbers and diversity, in an under resourced and slowly changing environment, make it difficult for teachers to work effectively with individual students, in the way that a schoolteacher works, despite the fact that more students now need individual attention to enable them to flourish in a university environment. However, making an effort, as described in this paper, may be a worthwhile start.

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