This is an electronic version of an article published in *Teaching in Higher Education*, Volume 15, Issue 6 December 2010 , pages 675 – 689, which is available online at: http://dx.doi.org/10.1080/13562517.2010.507301

Manuscript: CTHE-2009-0700

Title: Teaching and learning across disciplines: Student and staff experiences in a newly-modularised system

Authors: Eilis Hennessy[1], Rosario Hernandez[2], Patricia Kieran[3], Henry MacLoughlin[4]

Affiliations: [1]UCD School of Psychology

[2]UCD School of Languages & Literatures

[3]UCD School of Chemical & Bioprocess Engineering

[4]UCD School of Computer Science & Informatics

Address: University College Dublin, Belfield, Dublin 4, IRELAND

Corresponding Author: Dr Eilis Hennessy

Address: UCD School of Psychology

University College Dublin

Belfield, Dublin 4

IRELAND

Email: eilis.hennessy@ucd.ie

This is an electronic version of an article published in *Teaching in Higher Education*, Volume 15, Issue 6 December 2010 , pages 675 – 689, which is available online at: http://dx.doi.org/10.1080/13562517.2010.507301

Abstract

Within modular degrees it is sometimes possible for students to broaden their education by taking modules from outside their main programme of study. This is one significant aspect of modular degrees which has not been studied. In an effort to better understand this issue, the research reported in this paper explored the experiences (a) of students taking modules from outside their programme of study and (b) of staff teaching modules with significant numbers of students from other programmes. In total, 820 undergraduate students responded to an on-line survey; 12 academic staff members participated in interviews. The survey focused on students' reasons for choosing the module, their experiences of assessment and their perceptions of workload. Interviews with academic staff focused on the influence of non-programme students on teaching and assessment practices. The discussion addresses the implications of student choice and classroom diversity for teaching and assessment in modular systems.

This is an electronic version of an article published in *Teaching in Higher Education*, Volume 15, Issue 6 December 2010 , pages 675 – 689, which is available online at: http://dx.doi.org/10.1080/13562517.2010.507301

Introduction

Since the mid-1990s in the UK, and more recently in Ireland, university degrees have increasingly been structured into credit-based, modular systems. According to Betts and Smith (1998) this restructuring developed in response to demands for more flexible, faster and cheaper ways to educate growing numbers of third-level students. Modular degrees have many advantages for students, particularly if they wish to combine grades for learning in different institutions (e.g. via Erasmus exchanges). Additionally, modular degrees can reduce boundaries between disciplines by permitting students to combine modules from different disciplines, and promote integration of transferrable skills and discipline-based knowledge (Walker 1994). However, changes in degree structures have also prompted concern. For example, Barnett and Coate (2005) highlight the absence of discussion of curriculum and Billing (1996) identifies structural problems which can follow the implementation of a modular system.

Despite the widespread debate on modular degrees there has been relatively little focus on students' experiences of modularisation and in particular on the experiences of students who make use of their choices to enrol in modules from different disciplines. This is a surprising omission, given concern that students' exercise of choice within modularised systems can reduce the academic coherence of their degrees (Bell and Wade 1993; Jenkins and Walker 1994). Other aspects of student motivation (for example, intrinsic and extrinsic motivation to learn) have been widely debated and researched (Martin, 2009). Equally notable by its absence is research on the demands that are placed on teaching staff when their students come from a variety of disciplinary backgrounds. Greater diversity of student background can be a feature of classes in modular systems that permit students to choose modules from across a wide range of disciplines. This paper focuses on these topics, in the context of an Irish university which has recently introduced a credit-based, modular system. The change from a traditional to a modular degree structure provides an opportunity to investigate students' motivations and patterns of module selection within a system permitting all students some choice across the full range of disciplines. This paper also reports on the experiences and reactions of staff to changes resulting from students' module choices.

This is an electronic version of an article published in *Teaching in Higher Education*, Volume 15, Issue 6 December 2010 , pages 675 – 689, which is available online at: http://dx.doi.org/10.1080/13562517.2010.507301

Literature Review

The structure of modular degrees

Modular degrees are now widespread and researchers have charted the reasons for their rise to prominence in Canada (Goldschmid and Goldschmid 1973); the Netherlands (Van Eijl 1986); Britain (Bell and Wade 1993) and Uganda (Crossley et al. 1993). Despite many differences, all modular systems that are based on credit accumulation and transfer share an underlying philosophy that teaching and learning activities can be quantified and that units of instruction (modules) can be defined, measured and evaluated in terms of size, equivalence and learning outcomes (Bell and Wade 1993).

Modularisation is generally motivated by broadly similar reasons, including the need to cater for more diverse student populations, to minimise the duplication of teaching and to increase opportunities for inter-disciplinary study (Bell and Wade 1993; Crossley et al. 1993; Goldschmid and Goldschmid 1973; Van Eijl 1986). Modular programmes also allow students greater freedom to personalise their degree: students may choose to combine modules from different universities, they may take modules from different disciplines or they may progress through their degree at a pace that suits their personal circumstances. Thus, modular degrees are generally designed to allow students an appropriate degree of choice in managing their own studies (Betts and Smith 1998) and figures suggest that students are increasingly taking advantage of such flexibility. For example, participation in the Erasmus exchange programme has grown from 3000 students in 1987 to 182,000 in 2007/8 (European Communities 2009).

Despite this freedom, disciplinary divides remain; it is still relatively rare to find integrated cross-disciplinary degrees such as the innovative Arts and Sciences degree described by Pennee (2007). Likewise, Ensor (2004) concludes that, in South Africa, modularisation left degrees in the Sciences and Humanities fundamentally discipline-based. Thus, undergraduate students are making most of their choices from a menu of modules offered within a traditional, discipline-based degree programme; sometimes, they are free to choose a more limited number of modules from other programmes or disciplines.

This is an electronic version of an article published in *Teaching in Higher Education*, Volume 15, Issue 6 December 2010 , pages 675 – 689, which is available online at: http://dx.doi.org/10.1080/13562517.2010.507301

Even within discipline-based systems, authors voice concerns about the exercise of student choice. Typically the concern is that unwisely chosen modules can yield an intellectually fragmented (Jenkins and Walker 1994) or incoherent (Bell and Wade 1993) degree. Although little research has been undertaken on students' reasons for choosing modules, there have been suggestions of causes for concern. Jenkins and Walker (1994) identify the possibility that students may exercise their choice to avoid particular types of assessment practice (e.g. group work), although related skills may ultimately be important for their employment prospects. Simonite (2000) argues that students may seek a module that can be completed relatively easily, in order to maximise their overall degree classification. These authors raise legitimate concerns about the possibility that student choice may be influenced by the way in which a module is assessed, however there is little empirical evidence to test their arguments.

In an effort to ensure that student choice does not result in fragmentation of their undergraduate studies the designers of modular degrees typically introduce regulations to restrict choice (Bell and Wade 1993) including: i) designation of core or compulsory modules, ii) setting prerequisite learning requirements for entry to more advanced modules, iii) designating some modules as incompatible with others and iv) requiring students to obtain permission from a member of academic staff for their preferred selection of modules. Ultimately, the way in which such regulations are imposed determines the extent of student choice; this varies substantially across universities, depending on the structure of the modular system adopted (Walker 1994). Despite these concerns, broadening of educational experience has been formally endorsed by various researchers: for example, Duffrin, Berryman and Shu (2006) identify the importance of business, communication and technology skills for success in medical practice. Professional bodies, too, recognise the value of a broad undergraduate education. For example the Institution of Chemical Engineers (IChemE) "expects students to also gain the benefits of a rounded education and allows programme designers to have the flexibility to allow students to follow additional beneficial courses such as languages, management-related studies, history and culture etc" (IChemE 2008, 13).

Despite the potential benefits of taking modules from different academic disciplines, it is clear that this practice may bring students into contact with different

This is an electronic version of an article published in *Teaching in Higher Education*, Volume 15, Issue 6 December 2010 , pages 675 – 689, which is available online at: http://dx.doi.org/10.1080/13562517.2010.507301

academic traditions of pedagogy and assessment which may, in turn, present particular challenges. The potential consequences of crossing disciplinary boundaries are discussed in the next section.

Differences in academic traditions

Neumann, Parry and Becher (2002) identify differences between 'hard pure' disciplines (e.g. physics and chemistry) and 'soft pure' disciplines (e.g. history and anthropology). If students of a 'hard pure' discipline' enrol in modules offered by a 'soft pure' discipline they may find differences in the modes of assessment and determination of grades, as well as in curriculum delivery and independent learning required (e.g. Becher 1994; Neumann 2001; Neumann, Parry and Becher 2002). Successfully crossing disciplinary divides may, therefore, involve students reappraising their expectations of many aspects of their learning environment. For example, science students, familiar with modules involving considerable laboratory time, may be surprised to find that a humanities module involves extended periods of reading. How such violations of expectations influences students' perceptions of workload is not well researched. However, the importance of student perception of workload is highlighted by Kember and Leung's research (1998), which found that a perception of high course workload was associated with a surface approach to learning (Kember and Leung 1998). Students employing this approach tend to be motivated by the goal of avoiding failure, rather than understanding key concepts or the application of knowledge (Nelson Laird et al. 2008).

Neumann, Parry and Becher (2002) also note discipline-based differences in assessment methods, again emphasising differences between 'hard pure' and 'soft pure' disciplines. North's (2005) analysis of essays written for a history of science module by arts and science students uncovers differences in writing strategies, essay length, linguistic structure and tutor comments. From the students' perspective, the most important difference was that arts students were awarded significantly higher essay marks than science students. She notes that students enrolled in modular programmes may be required to adjust rapidly to unfamiliar aspects of a new discipline and that "learning an academic discourse is not a simple matter of learning a skill, but is bound up with particular beliefs, values and identities" (North 2005, 530).

This is an electronic version of an article published in *Teaching in Higher Education*, Volume 15, Issue 6 December 2010 , pages 675 – 689, which is available online at: http://dx.doi.org/10.1080/13562517.2010.507301

Collectively, the research findings identified here suggest that students who avail of the opportunities presented by a liberal modular system to take credits from outside their chosen academic discipline may confront a number of challenges such as differences in learning environment and assessment methods. Next, we consider the possibility that modularisation may also create challenges for academic staff.

The experiences of academic staff

Implementation of any curricular change is likely to involve challenges for teaching staff (e.g. Rees and Johnson 2007). With modularisation, staff are initially faced with changes in the organisational structure of the degree programme and associated administration. In the classroom, a modular system that permits choice may result in significant variations in the academic background of registered students. Billing (1996) argues that staff do not always anticipate the heterogeneity in enrolment resulting from students' freedom to take modules from a wider range of disciplines. He suggests that staff may even want to reduce student choice within modular systems because of this heterogeneity. Trowler (1997) reports that many academic staff find it difficult to adapt to the demands of modularisation; specifically, some staff become disillusioned under the burden of an increased workload, whereas others use the flexibility of the modular structure to attract increased student numbers. Between those two extremes, and consistent with the situation described by Billing (1996), Trowler (1997) describes staff attempting to reduce student choice by careful structuring of their modules or by manipulating prerequisites to ensure that only limited numbers of students were qualified to enrol. Trowler (1997) also reports specific attempts by some staff to reduce the availability of their modules as electives (i.e. as modules designed to broaden educational experience). The literature, therefore, indicates that modularisation can have a significant impact on staff morale and that staff responses to modularisation can influence how modules are made available to students.

The present study

The literature on modularisation indicates that modular degrees can offer advantages for students, but that the possibility of fragmentation of the educational experience presents a challenge. A modular structure that allows students to broaden their

educational experience by taking modules from outside their main programme of study may pose a further challenge to students, by exposing them to academic traditions with which they are unfamiliar and, for which they may not have the skills required. Despite a substantial body of empirical research and policy material relating to the changeover to modular degree programmes (e.g. Billing 1996; Trowler 1997) literature searches revealed no studies of the extent to which students avail of modular structures to broaden their undergraduate experience nor any specific studies of the experiences of students taking modules from other programmes (non-programme electives). This paper addresses these issues in the context of the experiences at University College Dublin (UCD), which has recently made the transition to a modular system.

UCD introduced a modular degree structure in 2005, with a view to facilitating students in directing personal learning. For most students, the system offers the opportunity to select two, semester-long, elective modules during each academic year (*i.e.* one-sixth of the annual module load) from within or external to their core programmes. This opportunity to select non-programme modules represented a radical change in the structure of undergraduate programmes; it was facilitated by requiring all modules to offer a proportion of elective places (normally at least 10%) unless there are very compelling professional reasons to the contrary. Examples of non-programme electives include a module in English Literature, taken by an Engineering student or a module in Physics, taken by an Arts student. The motivations and experiences of students who took non-programme electives were chosen as the focus of the present study because their experiences were most substantively different from those of students who had taken degrees under the traditional structure.

Specifically, the aims of the present study were to determine: (i) the distribution of non-programme elective choices across the university; (ii) the reasons for students choosing to take non-programme electives; (iii) whether students who chose non-programme electives believed they possessed the skills necessary to perform well in associated assessments; (iv) students' overall evaluation of their experience of taking the module; (v) the experiences of academic staff teaching students from a range of different disciplinary backgrounds.

This is an electronic version of an article published in *Teaching in Higher Education*, Volume 15, Issue 6 December 2010 , pages 675 – 689, which is available online at: http://dx.doi.org/10.1080/13562517.2010.507301

Method

Student survey

Survey instrument: The survey contained sections on: (a) student information: gender, student number (employed for verification purposes only), programme of study, area of study, current stage; (b) module information: module code and/or name, reasons for enrolling in the module; (c) experiences of the module: degree of difficulty (in absolute terms and relative to core programme modules), workload, necessary skills; areas in which the student felt at an advantage/disadvantage relative to other students. The survey contained both quantitative (Likert-type) questions and open-ended or qualitative questions.

Students were invited, via email, to participate in the survey, which was hosted on 'Survey Monkey', via a professional subscription (www.surveymonkey.com). The survey was accessible during a 6-week period (December 9, 2007 – January 18, 2008). The survey period covered the Semester I examination period, the Christmas vacation and the post-Christmas examination processing period.

All identifying data were removed from survey responses, prior to collation. Quantitative data were statistically analysed using Excel. Comments were subjected to content analysis (Miles and Huberman 1994).

Participants: The survey targeted 3425 UCD undergraduate students (Stages 1 – 5) who registered for non-programme electives, during Semester I, 2007-08. This cohort represents approximately 26% of the undergraduate population. The survey response rate was 29.8%, with a valid response rate of 24.0% (820 responses). Respondents were representative of the UCD undergraduate student population in terms of gender (population: 46.0% male, 54.0% female; survey: 43.7% male: 56.3% female), discipline and stage of progression.

Staff interview

Interview schedule: Based on the student survey, modules with significant numbers of non-programme students were identified in January 2008; the relevant module coordinators were invited to participate in individual interviews. Each interview included open-ended questions focusing on whether: (a) the module was designed specifically for non-programme students; (b) the presence of non-programme

students influenced the approach to teaching (and if so, how?); (c) the presence of non-programme students influenced the approach to assessment (and if so, how?). Interview responses were recorded, transcribed and subjected to content analysis (Miles and Huberman 1994).

Participants: Twelve staff, coordinating modules from Arts and Human Sciences, Medical and Health Sciences and Science were contacted; all agreed to participate. All but two were coordinating Level 1 modules, pitched at a level appropriate for students entering the University or new to the discipline.

Results

Distribution of non-programme elective choices

In total, 28.6% of UCD students enrolled in non-programme electives; however, participation rates varied considerably between programmes. Participation rates (Figure 1) were highest in the Sciences (39%) and in Business and Law (37%). In contrast, Arts and Human Sciences students accounted for only 8.9% of non-programme elective enrolments, despite the fact that these colleges account for 32.5% of the undergraduate student body (Figure 1).

Insert Figure 1 about here

Whereas Arts and Human Science students were least likely to enrol in non-programme electives, 55.5% of all elective enrolments were in modules offered by these programmes. Non-programme students accounted for less than 4% of enrolments in modules in Engineering and Architecture (1.4%), Agriculture and Veterinary Medicine (1.9%) and Business and Law (3.9%). Thus, a ‘typical’, enrolment in a non-programme elective involved a student of Science or Business enrolled in an Arts and Human Sciences module.

Student choice

Students were given five statements to rate, based on motives for choosing their specified elective module; responses are presented in Table 1. Students were also invited to indicate their own motive, if not covered in the five statements. In practice,

This is an electronic version of an article published in *Teaching in Higher Education*, Volume 15, Issue 6 December 2010 , pages 675 – 689, which is available online at: http://dx.doi.org/10.1080/13562517.2010.507301

a large number of students used the open-ended question to expand on their ratings, rather than to introduce a different motive.

The majority of students 'agreed' or 'strongly agreed' that they selected the module on the basis of an existing (63.8%) or anticipated (79.7%) interest in the subject area. The following quotations illustrate the range of explanations offered:

> *'Just because it was such a great opportunity to have a look at something that I never would have taken up independently'* [2 MHS/1 AHS][i]

> *'With a programme consisting of a lot of mathematics, a subject with real facts and theory such as this one was a welcome change.'* [2 E&A/1 SC]

Fewer students reported that they selected a module on the basis of enhancing employment prospects (49.2% 'disagreed' or 'strongly disagreed') or on coherence with their programme of study (57.5% 'disagreed' or 'strongly disagreed'). However, not all students were immune to employment-related potential:

> *'It was interesting and looks good on a CV since it has 'advanced' in the title.*' [4 B&L/3 AHS]

Insert Table 1 about here

A substantial minority of participants (46.1%) 'agreed' or 'strongly agreed' that they selected the elective as an 'easy option'; some used the open-ended question to justify this decision based on the demands of their major programme of study.

> *'When doing finals in a course like Engineering it's handy to have one subject that requires little study.'* [4 E&A/1 AHS]

> *'It's easy and I needed the space to concentrate on my core subjects.'* [3 B&L/2 AHS]

Overall, 27.8% of respondents either 'strongly agreed' or 'agreed' that it was the only elective they could get into. This is probably partly due to the fact that many of those taking non-programme electives were science students, many of whom have substantial laboratory work commitments and, consequently, less flexible timetables. However, other commitments may also have been important:

This is an electronic version of an article published in *Teaching in Higher Education*, Volume 15, Issue 6 December 2010 , pages 675 – 689, which is available online at: http://dx.doi.org/10.1080/13562517.2010.507301

> *'[It was the] Only module which fitted around my timetable and my job.'* [2 B&L/2 AHS]

The relatively low reliance of students on the recommendations of others (27.7% 'agreed' or 'strongly agreed') may be related to the fact that as modularised programmes are new there is little accumulated experience of individual modules on campus.

In summary, the reasons for student module choice were complex. For most students, interest in the subject matter, together with a perception of the module as providing easy credit were strong motivators, with enhancing employment prospects and links with their programme of study being less important.

Student skills and workload

Students were asked to rate 7 statements about their ability to cope with the elective module demands, the workload and their overall enjoyment of the module; responses are summarised in Table 2. Although many students may have been facing a new discipline, the results suggest that the majority believed that they had the skills necessary to manage the work required (66.5% 'agreed' or 'strongly agreed').

> *'My lack of knowledge of Art meant I was a bit nervous come assessment time. But my confidence in my intelligence and my ability to learn meant I had nothing to worry about.'* [4 B&L/3 AHS]

This confidence is further supported by the fact that 55.8% of respondents found their elective module easier than their core modules; 40.9% thought the module was 'easy' (*'It's an easy A!'* [2 B&L/1 AHS]). These figures are consistent both with the fact that so many students enrolling in non-programme electives chose level 1 modules, while they were at stage 2 or higher (Figure 2) and with the high percentage (46.6%) consciously choosing an 'easy option' (Table 1).

Insert Table 2 about here

Despite their belief that they had the skills necessary to succeed in their chosen module, 51% 'agreed' or 'strongly agreed' that the module was challenging.

This is an electronic version of an article published in *Teaching in Higher Education*, Volume 15, Issue 6 December 2010 , pages 675 – 689, which is available online at: http://dx.doi.org/10.1080/13562517.2010.507301

Clues as to the nature of these challenges emerged from the open-ended question; responses indicated that some concern about assessment issues:

> *'As I'm studying science I haven't had any experience of writing college essays and found it difficult.'* [1 Sc/1 AHS]

> *'My essay-writing skills weren't as good as those of the other students and they used a different type of referencing system.'* [2 E&A/1AHS]

Such concerns may be attributed, at least partly, to the fact that essay-writing is a very common feature of Arts and Human Sciences assessment practices; students from outside these programmes were less confident in their essay-writing skills. However assessment was not the only issue of concern:

> *'Subject was taught from the point of view that every student in the class was from a business background and not all terms/abstract ideas were explained in an understandable manner.'* [3 AHS/2 B&L]

Insert Figure 2 about here

Students' responses to the questions on module workload suggest that the majority did not believe it was excessive. While 35.4% 'agreed' or 'strongly agreed' that the workload was heavier than expected, a slightly greater percentage (39.8%) 'disagreed' or 'strongly disagreed' with the same statement. Similarly 34.7% 'agreed' or 'strongly agreed' that the module involved more independent work than they expected, while 37.9% 'disagreed' or 'strongly disagreed'. However, some students indicated that the novelty of the module they had chosen resulted in a heavier workload for them.

> *'It is completely unrelated to my core area of study. That would make it more time-consuming.'* [3 MHS/1 AHS]

Simultaneously, there was clear evidence of a widespread attitude that electives, in particular non-programme electives, ought not merit the same degree of either effort or rigor as core modules:

> *'It came very low on my list of priorities. My core modules were of much greater importance so I neglected this module'.* [3 Sc/1 AHS]

This is an electronic version of an article published in *Teaching in Higher Education*, Volume 15, Issue 6 December 2010 , pages 675 – 689, which is available online at: http://dx.doi.org/10.1080/13562517.2010.507301

Despite some reservations and concerns about assessment, overall it is clear that students' experiences of non-programmes electives were positive. The majority found the chosen module enjoyable (54.4% 'agreed' or 'strongly agreed'). Additionally, 74.7% of students would 'recommend this module to other students' and when asked 'If you knew in August what you know now, would you choose this module again?', 66.7% responded 'Yes'.

In summary, students positively evaluated their experience of the non-programme elective modules and there was no evidence to suggest that they they perceived the workload demands of these modules as too high. Although, in general, students believed that they had the necessary skills to succeed, some mentioned concerns about essay-writing.

Interviews with module coordinators

In the context of the present study it was important to select for interview staff who had experience of the changes in student enrolment patterns permitted under the new modular system. For this reason we chose to interview academic staff who coordinated modules which had proven popular as non-programme electives. However, it must be noted that this may mean that the staff were less likely to have negative reactions to modularisation.

The initial interview question focused on the module's target audience, crucially, on whether the module had been developed to attract students from different disciplines. Of the 12 coordinators interviewed, only 2 had developed their module specifically to attract non-programme students.

> *'The School has no natural 'constituency' among incoming Stage 1 students. And, recognising this, the School has deliberately designed this module to be widely accessible and consciously elective-friendly.'* [1 AHS]

The remaining modules were designed as core or option modules within their respective disciplines, although most coordinators were aware of their potentially broader appeal.

In the case of the modules specifically designed as electives, coordinators clearly anticipated non-programme enrolments but the numbers surprised some:

This is an electronic version of an article published in *Teaching in Higher Education*, Volume 15, Issue 6 December 2010 , pages 675 – 689, which is available online at: http://dx.doi.org/10.1080/13562517.2010.507301

> '[I was]….*flabbergasted by the enormous demand for places from non-programme students!'* [1 MHS]

For these modules, teaching and assessment strategies had been tailored to accommodate non-programme students:

> *'A conscious decision was taken to avoid specialised jargon.'* [1 MHS]

> *'[A] conventional essay (worth 20% of module grade) is still included; the bulk of the grade is based on workbooks completed during and after the Field Trip (40%) and the Museum Visit (40%)'.* [1 AHS]

Although most coordinators were aware that non-programme students were enrolled in the class, some were unaware of their numbers and backgrounds:

> *'[I] was aware that there were some non-programme students....had no idea that there were so many. It was only when [I] was preparing for the interview that [I] found out there were 68!'* [1 Sc]

Most reported that the presence of non-programme students did not influence teaching or assessment. However, during the interviews it became clear that, even where changes had not been implemented, staff were becoming sensitive to non-programme students and were considering associated alterations in teaching and assessment:

> *'In the first year I had two essays as the assessment for the module because I knew that it would be taken by many students as an elective. This did not work. Most of the students did not know how to write essays.'* [1 AHS]

Staff are as aware as students of the hurdles presented to non-programme students by discipline-specific skills. Staff identified essay-writing as the most critical skill, mirroring student comments and reflecting the high non-programme enrolment levels in these modules:

> *'Some programmes also do not emphasise essay-writing skills and students taking these programmes are at a disadvantage.'* [1 AHS]

This is an electronic version of an article published in *Teaching in Higher Education*, Volume 15, Issue 6 December 2010 , pages 675 – 689, which is available online at: http://dx.doi.org/10.1080/13562517.2010.507301

Overall, interviews with staff indicated that they were positive about the fact that their classes now contained a more heterogeneous mix of students, although they confirmed concern about the essay-writing skills of some students.

Discussion

This study investigated the motivations and experiences of a group of students taking elective modules from outside their programme of study, in a university that has recently modularised its undergraduate degrees. Approximately one-quarter of the undergraduate student population had chosen non-programme electives during the semester under investigation.

Student responses to the question about their motivations for registering for a non-programme elective suggest that interest in the topic was the dominant reason for their choice. However there was also evidence that some students were at least partly motivated by the desire to find an 'easy' module to increase their GPA. This provides some empirical support for Simonite's (2000) contention that students would be motivated to choose courses in such a way as to maximise their overall degree classification. We found no support, however, for Jenkins and Walker's (1994) contention that module choice is influenced by the desire to avoid particular modes of assessment.

Students' experiences of concern about novel assessments in a new discipline are entirely consistent with Neumann, Parry and Becher's (2002) analysis of assessment traditions in different disciplines. The fact that many UCD students and staff specifically mentioned essays fits well with North's (2005) comments on the way in which students from different disciplinary backgrounds approach essay-writing. In the present study, the finding is particularly striking because so many of the students were taking non-programme electives in Arts and Human Sciences while majoring in the Sciences. But, despite some concerns about essay-writing, the majority of students did not perceive the associated module workload as heavy. However, this is almost certainly explained by the fact that so many of the students were taking introductory modules (level 1), while they themselves were at more advanced levels in their studies.

Interviews with academic staff confirmed many of the findings of other studies exploring the experiences of staff in the years immediately following major curriculum

This is an electronic version of an article published in *Teaching in Higher Education*, Volume 15, Issue 6 December 2010 , pages 675 – 689, which is available online at: http://dx.doi.org/10.1080/13562517.2010.507301

changes. Consistent with Billing's (1996) findings, some of the staff interviewed here had not anticipated the substantial change in the composition of their classes arising from non-programme electives. The academics interviewed appeared to have consciously embraced the new modular structure, viewing it as an opportunity to reach a wider group of students than was previously possible and, as such, they are consistent with Trowler's (1997) categorisation of academics who were 'swimming'. None of our interviewees showed signs of 'sinking', which Trowler (1997) describes in terms of weariness and disillusionment.

Conclusions

The present study was conducted in a single Irish university shortly after the introduction of modularisation. However, the focus on students' motivation for choosing non-programme electives means the results are relevant for a wide range of universities offering modular degrees. The findings add to the literature on the academic divide between disciplines by providing students' perspectives on their personal experiences of crossing such divides.

Our findings suggest that when degree structure permits, students will be motivated by their personal interests to take modules outside their core programme of study. When this results in students crossing disciplinary divides there are important implications for assessment. In the case of the present study this was particularly evident in the concerns about students' essay writing skills expressed by staff and students alike. Such concerns need to be taken seriously and universities must consider whether they are best delivered within individual subject modules as required or through the provision of modules that teach generic skills.

The debate on breadth versus depth in academic study is ongoing and often controversial. In future research it would be valuable to contact the graduates of modular degrees to elicit their perceptions of the value of non-programme modules taken during their undergraduate careers. This would provide a longer-term analysis of the benefits of such decisions and would provide additional useful information for students faced with a wide selection of elective modules from across the full range of academic disciplines.

This is an electronic version of an article published in *Teaching in Higher Education*, Volume 15, Issue 6 December 2010 , pages 675 – 689, which is available online at: http://dx.doi.org/10.1080/13562517.2010.507301

REFERENCES

Barnett, R. and K. Coate. 2005. *Engaging the curriculum in higher education*. Berkshire: Open University Press.

Becher, T. 1994. The significance of disciplinary differences, *Studies in Higher Education* 19: 151–161.

Bell, G. H. and W. Wade. 1993. Modular course design in Britain: Some problems, issues and opportunities. *Journal of Further and Higher Education* 17: 3-12

Betts, M. and R. Smith. 1998. *Developing the credit-based modular curriculum in higher education*. London: Falmer Press.

Billing, D. 1996. Review of a modular implementation in a university. *Higher Education Quarterly* 50: 1-21.

Crossley, M., G. Clarke, T. Tabi and H. Thomas. 1993. Implementing the process of modularisation in higher education: Some trans-national issues. *Higher Education Quarterly* 47: 334-356.

Duffrin, C., D. Berryman and J. Shu. 2006. Creating a new paradigm for premedical undergraduate studies: Physician's perceptions of subjects and skills critical for success in medical school and practice. *Medical Education Online* 11: 1-6.

Ensor, P. 2004. Contesting discourses in higher education curriculum restructuring in South Africa. *Higher Education* 48: 339–359.

European Communities 2009. The EU contribution to the Bologna process. Luxemburg: Office for Official Publications of the European Communities. [Downloaded from http://issuu.com/agence/docs/eu-contribution-bologna-process April 3rd 2010 10.30 AM]

Goldschmid B. and M. L. Goldschmid. 1973. Modular instruction in higher education: A review. *Higher Education* 2: 15-32.

IChemE, 2008. Accreditation of Chemical Engineering Degrees - A Guide for University Departments and Assessors, Based on Learning Outcomes (Master & Bachelor Level Degree Programmes). Rugby: Institute of Chemical Engineers.

Jenkins A. and L. Walker. 1994. Introduction. In *Developing Student Capability Through Modular Courses*, eds. A. Jenkins and L. Walker, 19-23. London: Kogan Page.

Kember, D. and D.Y.P. Leung. 1998. Influences upon students' perceptions of workload. *Educational Psychology* 18: 293–307.

Martin, A.J. 2009. Motivation and engagement across the academic life span: a developmental construct validity study of elementary school, high school, and university/college students. *Educational and Psychological Measurement* 69: 794-824.

Miles, M.B. and M. Huberman. 1994. *Qualitative data analysis: An expanded sourcebook.* London: Sage.

Nelson Laird, T. F., R. Shoup, G. D. Kuh and M. J. Schwarz. 2008. The effects of discipline on deep approaches to student learning and college outcomes. *Research in Higher Education* 49: 469-494.

Neumann, R. 2001. Disciplinary differences and university teaching, *Studies in Higher Education* 26: 135–146.

Neumann, R., S. Parry and T. Becher. 2002. Teaching and learning in their disciplinary contexts: a conceptual analysis. *Studies in Higher Education* 27: 405-417.

North, S. 2005. Different values, different skills? A comparison of essay writing by students from arts and science backgrounds. *Studies in Higher Education* 30: 517-533.

Pennee, D.P. 2007. Between cultures: Using curriculum assessment to develop and deliver the integrated core of an arts and sciences programme. *New Directions for Teaching and Learning* 112: 59-67.

Rees, D. and R. Johnson. 2007. All together now? Staff views and experiences of a pre-qualifying interprofessional curriculum. *Journal of Interprofessional Care* 21: 543-555.

Simonite, V. 2000. The effects of aggregation method and variations in the performance of individual students on degree classifications in modular degree courses. *Studies in Higher Education* 25: 197-210.

Trowler, P. 1997. Beyond the Robbins trap: Reconceptualising academic responses to change in higher education (or quiet flows the don?). *Studies in Higher Education* 22: 301-318.

Van Eijl, P. J. 1986. Modular programming of curricula. *Higher Education* 15: 449-457.

This is an electronic version of an article published in *Teaching in Higher Education*, Volume 15, Issue 6 December 2010 , pages 675 – 689, which is available online at: http://dx.doi.org/10.1080/13562517.2010.507301

Walker, L. 1994. The new higher education systems, modularity and student capability. In A. Jenkins and L. Walker, eds. *Developing Student Capability Through Modular Courses.* London: Kogan Page.

This is an electronic version of an article published in *Teaching in Higher Education*, Volume 15, Issue 6 December 2010 , pages 675 – 689, which is available online at: http://dx.doi.org/10.1080/13562517.2010.507301

Acknowlegement

This research was possible because of Fellowships in Teaching and Academic Development awarded to the authors and funded by the Strategic Innovation Fund.

This is an electronic version of an article published in *Teaching in Higher Education*, Volume 15, Issue 6 December 2010 , pages 675 – 689, which is available online at:
http://dx.doi.org/10.1080/13562517.2010.507301

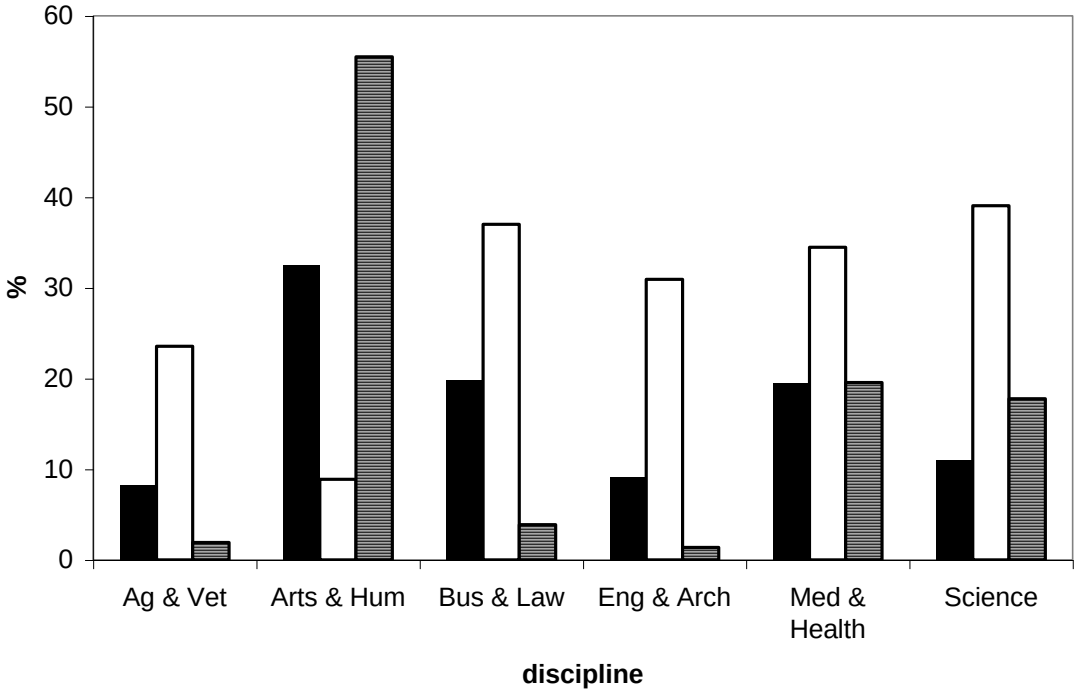

Figure 1

This is an electronic version of an article published in *Teaching in Higher Education*, Volume 15, Issue 6 December 2010 , pages 675 – 689, which is available online at: http://dx.doi.org/10.1080/13562517.2010.507301

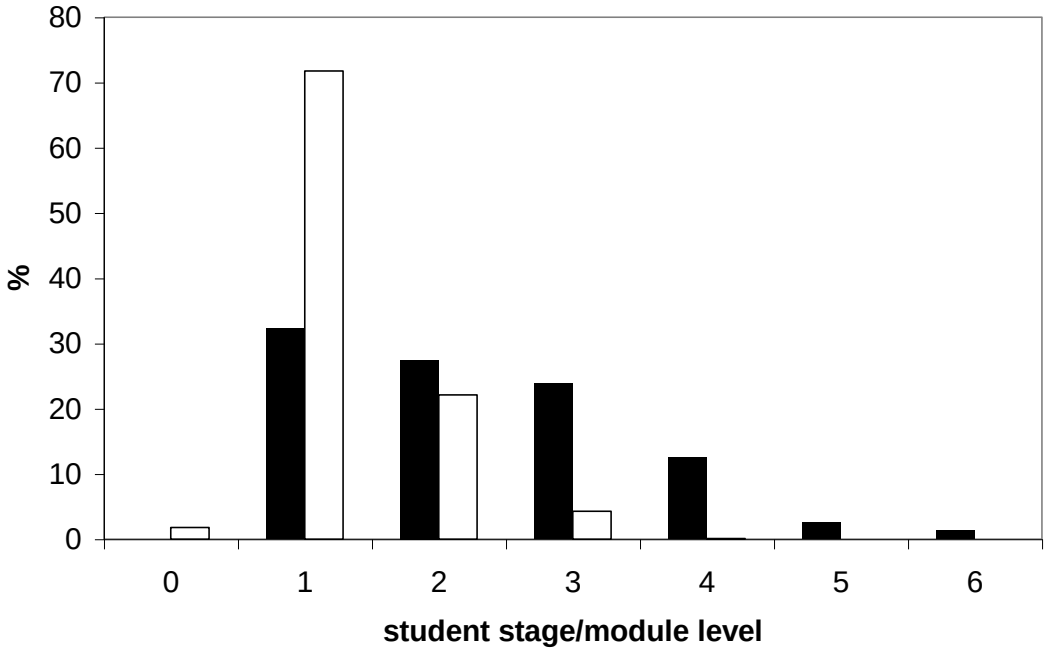

Figure 2

This is an electronic version of an article published in *Teaching in Higher Education*, Volume 15, Issue 6 December 2010 , pages 675 – 689, which is available online at:
http://dx.doi.org/10.1080/13562517.2010.507301

Table 1

Statement	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
It's a subject which really interests me.	25.3	38.5	21.5	8.5	6.1
It's a subject which I thought would interest me.	29.8	49.9	9.7	6.6	4.0
It would enhance my employment prospects.	8.1	13.6	29.1	27.7	21.5
The subject supports my programme of study.	5.9	14.5	22.0	29.7	27.8
I thought it would be an easy option.	16.3	29.8	24.8	20.5	8.6
It was the only elective module I could get into	10.9	17.0	15.9	28.4	28.3
Someone recommended it to me.	6.7	15.9	16.3	29.4	31.7
Other	14.8	9.3	43.3	4.8	27.8

This is an electronic version of an article published in *Teaching in Higher Education*, Volume 15, Issue 6 December 2010 , pages 675 – 689, which is available online at:
http://dx.doi.org/10.1080/13562517.2010.507301

Table 2

Statement	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
I found this module easy.	10.4	30.5	28.1	23.7	7.4
I enjoyed the classes in this module.	19.5	34.9	20.6	17.4	7.6
On average, I found this module easier than my programme modules.	24.9	30.9	20.9	15.8	7.5
The workload for this module was heavier than I expected.	9.2	26.2	24.8	30.8	9.0
There was more independent work than I expected.	8.5	26.2	27.5	30.3	7.6
I have the skills to be successful in this module.	19.0	47.5	23.7	6.9	3.0
Overall, I found this module challenging.	11.2	39.8	29.0	14.4	5.7

This is an electronic version of an article published in *Teaching in Higher Education*, Volume 15, Issue 6 December 2010 , pages 675 – 689, which is available online at:
http://dx.doi.org/10.1080/13562517.2010.507301

Figure Captions

Figure 1. Discipline-based distribution (%) of the UCD undergraduate student body (■); % of students from within these disciplines enrolled in non-programme electives (□); non-programme elective enrolments in modules within these disciplines (▤) during Semester I 2007-08.

Figure 2. Distribution of UCD undergraduate students, by stage (■) and of non-programme elective enrolments, by module level (□) during Semester I 2007-08.

Table Captions

Table 1. Summary of the distribution of student responses when asked to 'rate the extent to which each of the following statements describes your reasons for taking this elective module'.

Table 2. Distribution of student responses on their experiences of taking the elective module.

[i] Abbreviations are used in attributing quotations: B&L = Business and Law; AHS = Arts and Human Sciences; Sc = Sciences; E&A = Engineering and Architecture; MHS = Medical and Health Sciences. The student's stage and programme are indicated after each quotation, followed by the elective level and programme.