Can psychology revolutionise Higher Education?
Part 3

Student mental health
A university challenge?

SALLY OLOHAN *on whether psychology can help to create a better environment in higher education for students with mental health difficulties.*

IN recent years there has been a growing interest in the issue of student mental health. Sensationalist headlines have suggested that the higher education experience can be damaging to the emotional and mental health of young adults (e.g. 'I can't take any more', *Guardian Higher*, 23 March 1999; 'Stressed and desperate', *Sunday Times*, 10 February 2002). Heads of university and college counselling services have reported increases in the proportion of 'seriously disturbed' students using these services (Rana *et al.*, 1999). There has also been a growth of additional specialist services within universities and colleges to meet demand from students with mental health difficulties, and to support these students in their academic progression.

How can we explain these developments? What contribution can psychology make to improve the teaching and learning environment in higher education? Could psychologists help universities and colleges to respond more effectively to the needs of students with mental health difficulties?

To answer these questions it is important to outline the range of issues and experiences that the term 'student mental health' might encompass. Although there may be various interpretations of this concept, the following may provide a useful framework for understanding.

Students with specific mental health disorders

A number of university students with pre-existing mental health difficulties may have (or have had) some contact with secondary healthcare services in connection with these difficulties ('mental health service users'). There will also be some individuals who develop significant mental health difficulties during the time that they are engaged in higher education study. The peak age for the onset of schizophrenia, for example, is between 18 and 24, so it is to be expected that there will be a number of students who experience their first psychotic episode while studying at university. In a recently published report of a conference on student mental health (Heads of University Counselling Services, 2003) Dr Mike Hobbs (chair of the Royal College of Psychiatrists' Working Group on the Mental Health of Students) is reported to have indicated that disorders encountered in student populations included anxiety and depression, alcohol and substance abuse, eating disorders and serious behavioural problems. Psychotic illness and suicide were rare but extremely disturbing to family, friends and the community.

Students with specific mental health disorders are likely to fall under the definition of a disabled person within the Disability Discrimination Act 1995 (which since September 2002 has applied to education providers) and so have strengthened rights in terms of the provision of learning. However, students with long-standing mental health difficulties may also require advocacy support, and creativity on the part of lecturers, tutors and programme leaders to achieve a learning environment that enables them to demonstrate their academic strengths.

There has been considerably more development in the adult and further education sectors to promote inclusive learning opportunities for people with mental health difficulties. Wertheimer (1997) outlines aspects of good practice

Mental health difficulties – who, where, when?

WEBLINKS

Oxford Student Mental Health Network: *www.brookes.ac.uk/student/services/osmhn/*

Royal College of Psychiatrists report on student mental health: *www.rcpsych.ac.uk/publications/cr/cr112.htm*

Student Mental Health Planning, Guidance and Training Manual: *www.studentmentalhealth.org.uk*

Student Counselling in UK Universities: *www.studentcounselling.org*

University of Leicester Student Psychological Health Project: *www.le.ac.uk/edsc/sphp*

obtained from a survey of 131 FE colleges and 47 local education authorities. This study found that in around a quarter of cases, prospective students were referred by an external agency, including psychology units of local hospitals, community psychiatric nurses, social workers or key workers. Interagency collaboration was highlighted as being crucial to the success of initiatives undertaken by individual colleges and LEAs. Unfortunately, such interagency and outreach links do not generally feature in universities' widening participation activities.

Students with emerging mental health difficulties

The mental health charity MIND suggests that one in four of us will experience mental health difficulties at some point in our lives and, more encouragingly, will respond positively to supportive intervention. With an increasingly diverse student population, in terms of age, social class, ethnicity, and so on, we can expect that a similar level of incidence will be reflected within higher education.

The pressure to succeed, course deadlines, examinations, large lecture groups, reduced contact with key teaching staff and the intensity (or isolation) of social and residential experiences can all have potentially disabling effects for individuals who experience mental health difficulties, and may prevent them from experiencing the full benefits higher education has to offer. For a significant proportion of younger students, the experience of entering higher education coincides with the transition to greater independence from family members and with the first real experience of living away from home and managing new social and financial challenges. Social psychologists offer useful perspectives on these issues. Apter (2001) has studied the experience of 'thresholders', young people between the ages of 18 and 25, and suggests that universities should offer pastoral and academic support to students who may be struggling with the psychological transition to adulthood and also 'challenge the myth that their students are grown ups' (Apter, 2002). For older students, full- or part-time education may be combined with complex family responsibilities and changing relationships with partners. These dynamics may create pressures that can manifest themselves as emotional distress and mental health difficulties.

A pilot study of 40 students on courses in professions allied to medicine conducted by Monk and Mahmood (1999) found that the major difficulties were coursework and emotional state. The authors concluded that student mental health services are desirable, to complement student advisory or counselling services, and that they should be operated by someone from a relevant professional background or experience, including clinical or counselling psychologists. Manthorpe and Stanley (1999) identified the issue of meeting criteria for professional suitability and fitness to practise as a particular concern for students with mental health difficulties, and their supervisors, on courses preparing students for the 'caring professions'.

For many students, mental health problems will be short-lived and will be ameliorated by supportive intervention from peers and family, counselling and medication. But there is a need for institutions to develop procedures and practices that respond effectively to signs of emerging mental distress or mental illness and to assist individuals to access specialist services within the community.

Mental health promotion

There is much work still to be done in promoting the concept of mental wellness, and even in encouraging students to acknowledge that their mental health deserves as much attention as their physical well-being. Indeed, it could be argued that the lifestyle of some students serves to normalise certain behaviours (poor sleeping habits and diet, misuse of alcohol and other drugs) that can contribute to, or be indicators of, significant mental health difficulties.

Webb *et al.* (1996) surveyed second-year students' alcohol and drug use in 10 UK universities that had a medical school. They found that many university students were drinking alcohol above sensible limits and concluded that there is a need for better education about alcohol, drugs and general health, and longtitudinal studies on the relevance of present student lifestyles on future health.

Grant (2002) conducted an institution-wide study in one university. The study aimed to identify the extent to which a wide range of issues impacted on self-perceived stress levels and academic and personal responsibilities, and to examine the help-seeking behaviour of 1670 second-year undergraduate students. The results indicated that 40 per cent of students were concerned with issues related to

depression, and that 23 per cent were worried about managing anxiety, phobias or panic attacks. Friends and family were regarded as the primary source of support, followed by personal tutors, the student health centre and other academic staff.

What are universities and colleges doing?

Universities UK (2000) suggested that a more coherent institutional structural approach is required in the area of student mental health, involving specialist professionals from outside the sector; for example, psychiatrists, clinical psychologists, GPs and mental health teams.

Some universities are now starting to develop these structures. Recent amendments to the Disability Discrimination Act 1995 require universities and colleges to provide auxiliary aids for disabled learners from September 2003. A number of institutions are already developing specialist schemes to provide additional support and technological aids to facilitate learning for students with mental health difficulties. These specialist services include auxiliary aids that may be made more generally available for a wide range of disabled students, such as notetakers, personal assistants and mentors and more specialist liaison roles, including mental health liaison officers, mental health coordinators and mental health support workers. Practitioner networks are also being set up, and information resources have been developed for students to promote the sharing of good practice and professional frameworks (see weblinks).

Students regard friends and family as their primary source of support

The next step, however, will be to make curriculum delivery and assessment design as accessible as possible, either to meet individual needs or as a general principle. This will be a challenging process, as it will require debate on issues of academic practice and standards. For example, do we choose to assess by traditional examinations – which may present significant barriers to progression for some students with mental health difficulties – because the learning outcomes demand this, or simply because this method provides a more efficient means of conducting and marking assessments? A number of development projects exploring these issues are currently being funded by the Higher Education Funding Council for England, through its special funding programme Improving Provision for Disabled Students. This initiative will provide £2.8 million funding over the period 2003–2005 for 23 projects to develop and disseminate resources relating to the learning and teaching of disabled students.

What can psychology contribute?

The issue of student mental health has been largely overlooked as a topic for psychological research. Recent UK studies, although welcomed, have tended to focus rather simplistically on single-issue causes for students' mental health difficulties, or have sampled students in specific subject areas (such as financial problems in psychology students: Roberts *et al.*, 1998) or the perceptions of groups of staff, such as lecturers (Easton & Van Laar, 1995). Most studies have been based in one institution, which, given the variety of organisational cultures that exists in higher education, limits the extent to which findings can be generalised.

However, in October 2003 the Royal College of Psychiatrists published a more comprehensive review of the nature, prevalence and causes of students' mental health problems (Royal College of Psychiatrists, 2003; see also weblinks). The review indicates that although students report increased mental health symptoms compared with age-matched controls, there is no evidence to confirm that students are more likely to suffer mental illness. Students in higher education are at no higher risk of suicide than the general population, and may be at lower risk. There appears to be some evidence of increased mental health symptoms among international students.

The Royal College of Psychiatrists report presents recommendations for the development of strategic policy and best clinical practice, aimed primarily at those who commission and provide mental health services. These include the recommendation that local networks should be developed to ensure shared policies and cooperation between higher education

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institutions, primary care services, mental health services, and other relevant agencies.

Further work is required to fully understand the impact of higher education student support structures and services on the student experience and student achievement. A sector-wide research study into the role of student services in higher education (Universities UK, 2002) suggested that effective liaison between specialist student services and academic support structures could facilitate the development of curricula and pedagogy that promote a 'culture of achievement', in contrast to the perception that some non-traditional students are deficient and therefore require remedial help. The study also concluded that more empirical evidence is required of the efficacy of these types of services. Recent single-institution studies have sought to examine the impact of counselling intervention on levels of psychological distress and academic achievement (Potter, 2002; Rickinson, 1997), but there is further potential for university psychology departments to work collaboratively with colleagues from specialist student services and engage in research activity around the issue of student mental health.

Areas of applied psychology also have a valuable contribution to make. A number of counselling psychologists are already working within university student service contexts. Social psychologists could continue to contribute to our understanding of the impact of the social context of the higher education experience on students' functioning and well-being. Educational psychologists play a central role in the development of inclusive educational practice in the school sector, but with a few exceptions (such as retained or contracted educational psychologists conducting assessments of dyslexia or specific learning difficulties) rarely feature as 'special needs' consultants or practitioners in higher education.

As the sector meets the challenge over coming years to develop new approaches to teaching and learning that take account of the increasing diversity of the higher education student population, there is the potential for educational psychologists to apply relevant theoretical and practical teaching frameworks to the higher education context. Clinical psychology also has much to offer current efforts within many university counselling services to focus on the provision of brief focal therapy. Clinical psychology approaches could also have a direct application in the specialist services that are increasingly being developed to support students with identified mental health difficulties.

Paradoxically, we can expect an increase in disclosure of mental health difficulties as a result of these efforts, as more students come to realise there are benefits to be gained from identifying their needs. If more students with mental health difficulties are identified, this should, in fact, be regarded as a positive indicator of progress in promoting inclusion for an underrepresented group that is often overlooked within widening participation strategies.

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‘And your chosen specialist subject is…’

PATRICK LEMAN *looks at the importance of subject choice in achieving that elusive first.*

WHAT does it take to get a first? Most of us would probably agree that good results have at least something to do with hard work (or at least not spending too much time in the bar) and natural ability… maybe a little luck. But research has suggested that other aspects of a student’s identity – gender, ethnicity and in particular the subject a student chooses to study – might also be important. Understanding these factors might not ‘revolutionise’ students’ time in higher education, but it may make quite a difference to the end result.

The ‘gender gap’ in higher education

Recent interest has focused on a body of research from Cambridge and Oxford Universities showing that consistently fewer women than men achieve first class marks at undergraduate level (Leman, 1999; McCrum, 1994, 1998). But this ‘gender gap’ is not limited to Oxbridge – the most recent available data from across the UK (HESA, 2003) reveal that 9.2 per cent of women who graduated in 2002 achieved first class marks – the indicator of excellence at undergraduate level – compared with 10.1 per cent of men. However, women do get more second class marks and fewer thirds, passes and fails. And women are also less likely to drop out once they start their course (Metcalf, 1997; Thomas, 1990). So although the picture for women is not universally gloomy, women still lag behind their male counterparts in terms of academic excellence at undergraduate level.

Similar gender differences have existed for many years (see Rudd, 1984). That they persist is striking, since for the past few years women entering university have higher grades (at A-level or the equivalent) than men. Moreover, data from the Higher Education Funding Council for England show that pre-university academic performance is a pretty good predictor of a student’s eventual degree class (Bekhradnia & Thompson, 2002). So what’s going on within the British university system to create the observed variations in academic performance?

Explaining gender differences in performance

Several researchers have sought to account for the observed gender differences in performance in sociobiological terms. Some of these explanations are pretty asinine: we can easily dismiss the suggestion of a link between women’s underperformance and the menstrual cycle (Richardson, 1991) – amongst many other problems with such an account is that, as we have seen, women’s performance is distributed differently rather than being universally poorer. But more sophisticated accounts deserve a closer look. For instance, Goodhart (1988) has argued that the different distributions of male and female performance are a consequence of broader gendered characteristics of risk taking (male) and playing safe (female). Goodhart suggests that, in the examination hall, men are more likely to take risks and produce work that is recognised as original, controversial and ‘first class’. Women, who prefer to play safe in examinations, will produce solid yet uncontroversial writing that is recognised as competent but not ‘first class’.

However, an aspect of academic performance that sociobiological accounts have some difficulty explaining is the considerable variation in the effects of gender across subject areas. My study of undergraduate degree results at the University of Cambridge found that the subject a student studied was the strongest source of variation in terms of marks awarded (Leman, 1999). Other studies have found similar results on a national level (Clarke, 1988). In fact, subject area appears to moderate the influence of social variables such as gender (McCrum, 1998). Whilst in some subjects the gender gap in marks is strikingly in favour of the men, in a few it favours the women, and in some others there is no difference at all. Psychology is not one of the worst offenders here – gender differences are quite small but do show a slight overrepresentation of men obtaining first class marks compared with women (see Newstead, 2000)

Precursors of exam performance

A possible explanation for the subject area differences is that in some areas ‘riskier’ essays are valued over more balanced accounts. Moreover, a student might take risks in other ways, such as question-spotting – a student might revise a few topics in detail and hope that these will come up in an examination. Such a strategy could reap dividends if the right topics come up but could lead to failure if not.

However, the risk-taking hypothesis is not borne out by empirical results. Mellanby *et al*. (2000) found that although male undergraduates were more likely to use risk-taking strategies, this factor was not predictive of academic performance. The researchers looked at a range of other personality and individual factors, including verbal and non-verbal reasoning, self-esteem and perceptions of academic efficacy. They gave their questionnaires to students between two and three months before their final examinations. Only verbal reasoning was found to predict students’ marks.

More recent research followed a random sample of students throughout their undergraduate careers. Surtees *et al.* (2002)

WEBLINKS

Higher Education Statistics Agency: *www.hesa.ac.uk*
Findings from the ‘Cambridge project’:
www.admin.cam.ac.uk/reporter/2002-03/weekly/5913/6.html

found that women were twice as likely as men to encounter psychological difficulties such as anxiety and depression whilst at university. Moreover, analysis of their longitudinal data revealed that these difficulties often resulted in poorer degree results.

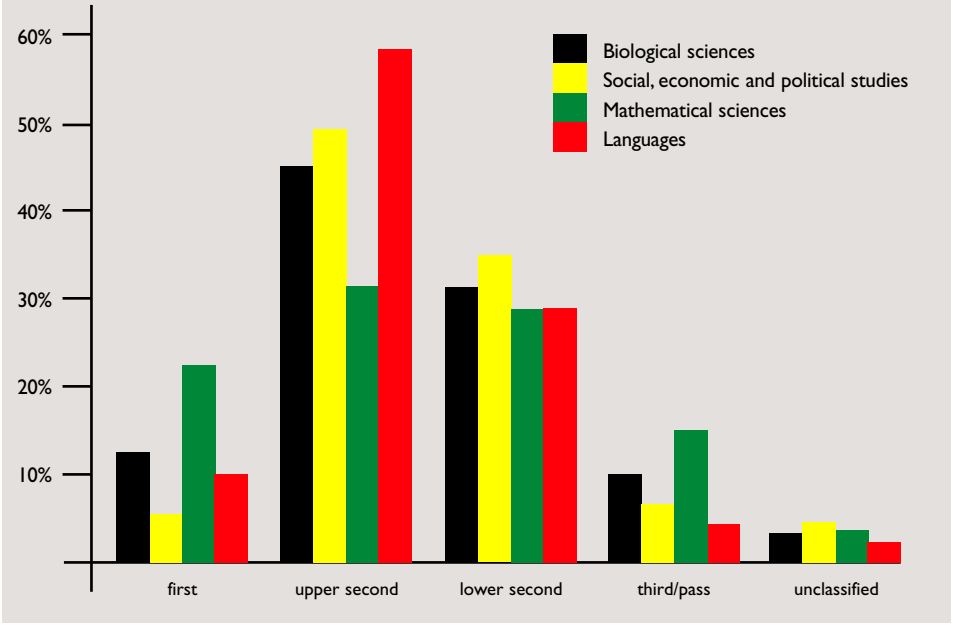
On one level these findings might not seem terribly surprising – for many students their time at university coincides with the first extended period away from the family home. School leavers suddenly find themselves dislocated from familiar social support networks, and alongside a newfound social independence runs the need for adjustment to a new way of studying that requires greater autonomy and self-discipline. If these difficulties somehow interfere with students' ability to study effectively, it might explain some of the variation by gender in academic performance. But this explanation can only go so far. It remains unclear why the university environment disproportionately triggers psychological problems in women. Moreover, and in line with previous research, Surtees *et al.* (2002) found two factors best explained gender differences in performance: students' grades on entry and subject area.

The Cambridge project

In response to growing concern over the relative underperformance of women the University of Cambridge set up a large-scale study into the causes of variation in undergraduate academic performance (Leman & Mann, 2002). The project picked out several factors that might lead to the observed variations – see Whitehead (2003) for a fuller summary. Once again a central finding from the statistical analysis was that a large part of the variation in academic performance stemmed from differences between marks awarded in different subject areas. For instance, in a subject like mathematics (in which the majority of students are men) around one in three of all degrees awarded were first class. But in history the number of firsts was closer to one in eight. Variation in the number of firsts and other degree classes awarded across UK in 2001/2 in four different subject areas is shown in Figure 1.

Given the variations across subject areas it may be tempting to assume that the gender gap could be explained in terms of the numbers of men and women on different undergraduate courses: if there are more men studying subjects such as mathematics, which awarded more firsts, this might well explain the higher proportion of men receiving first class marks across the British HE system. However, even if this does explain part of the gap across the country, there still exists a gap in the proportion of men and women achieving the top marks within particular subjects. And in subjects such as English and modern languages (where women are in the majority) women still receive proportionately fewer firsts than their male peers.

FIGURE 1 Degree classes awarded in the UK in 2001/2 by subject (HESA, 2003)



Qualitative analyses of interviews with both staff and students from the Cambridge project identified a common perception that, compared with men, women tend to lack confidence. It was widely believed that this comparative lack of confidence fed into less female participation in teaching sessions and into the levels of anxiety that students, particularly women, felt before examinations. Many staff and students (men and women) also felt that examination as a method of assessment and an excessively competitive academic environment (which one academic described in Darwinian terms – 'the survival of the fittest') does not suit women well. Many women who were disappointed not to get a first at the end of their course felt they would have performed better had they produced more confident, argumentative, 'risky' essays. In fact, both men and women and students and staff reported that they felt that a brash, confident written style – what was termed the 'Cambridge answer' – was often valued in assessment over a more balanced approach.

However, even if such a view appears to be widely held, it is not necessarily an accurate one. Nor does it necessarily supply a full explanation for gender differences in academic performance – the 'Cambridge answer' may be more myth than reality. It is worth noting that Mellanby *et al.* (2000) found no link between self-esteem and academic performance in their study.

The significance of subject area

A closer look at statistical analyses of academic performance at university points to a more complex pattern of variations in performance. In another study of Cambridge undergraduates (Leman, 1999) I uncovered variations in undergraduate performance along both gender and subject area lines. But there were some other sources of variation in performance too. For instance, there was more limited but still significant variation by a student's ethnic group. There was no significant variation by socio-economic status, but some differences in terms of a student's school background (comprehensive, independent, and so on). Like the gender differences, these variations in academic performance were moderated by

differences in subject area. In fact, it was almost as if each different subject area had a profile of the characteristics of an excellent student. In history, white, independently educated men performed very well – all of these characteristics were associated with a higher proportion of first class marks for those studying history. In mathematics (at Cambridge at least), whilst men outperformed women in terms of firsts, students from ethnic minorities performed proportionately better than those from the majority white group. In law, whilst men and women performed equally, students who had previously attended comprehensive schools ended up with proportionately more first class marks than their peers who had attended independent schools.

How then are we to account for these rather peculiar variations in academic performance at university? One approach might be to look away from the specific question of undergraduate academic performance for a moment. In this respect both gender and ethnicity have for some time been implicated as factors affecting schoolchildren's academic performance: studies of children at school have emphasised the links between children's gender, ethnicity and social class, their academic performance and the expectations that teachers, adults, peers and even the children themselves have of their ability (e.g. Lloyd & Duveen, 1990; Pellegrini & Blatchford, 2000; Walkerdine, 1989). Perhaps we should not be too surprised if similar processes are at work amongst undergraduates.

Studying and 'being' – expectations based on subject

It also appears that a key aspect of a student's social identity at university is the subject he or she studies. This aspect of identity may also entail certain expectations. For example, even if we don't buy into it we can probably give a good account of the 'stereotypical' image of a physicist – nerdy, white-coated… and probably male! This image carries with it very different expectations from the image of, say, a sociologist or art student. And it is important too that subject labels may carry with them very different associations with gender. These associations may remain implicit but nevertheless retain the ability to influence our interactions and perceptions of self (for a review of implicit attitude measures and their effects, see Fazio & Olson, 2003). But they can be rendered explicit too: films such as *Billy Elliott* and *Bend It Like Beckham* play upon the sources of resistance that can arise when boys and girls seek to cross societal 'boundaries' of gender and ethnic roles.

In this sense we might be able to see how gender, ethnicity and other aspects of a student's social identity interlink with the subject area he or she studies to lead to a rather specific set of expectations concerning that student. These expectations create, in turn, pressures to behave, study and maybe even write in certain ways. Thus, for example, a woman succeeding in a science discipline has to overcome the preconception that science, with its emphasis on organisation and systematisation, is simply not a 'woman's subject' (Baron-Cohen, 2003; Boring, 1951).

One final note: it seems unlikely that it is just teachers and examiners who are the causes of the gender gap in academic performance at university. Beliefs and expectations about gender and ethnic groups, and about different subject areas and professions pervade society – this is why they are such powerful forces in shaping our attitudes and behaviour. (If you doubt it, just watch the transformation in body language when you tell someone who doesn't know you that you're a psychologist.) One important source of influence at university is a student's peer group – it seems likely that the subject a student studies might lead peers to form certain expectations of the sort of person they are. Again, these expectations could feed through into a student's self-concept and eventually into academic performance.

Next October, if you happen to overhear a conversation between two unacquainted freshers, it's a reasonable bet that one of the first questions they'll ask each other is 'What subject are you studying?' It might just be a casual enquiry. But the answers they give will almost certainly have an influence on the results they achieve three years later.

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ROY PETERS (REPORTDIGITAL.CO.UK)

All together now

CHRISTINE HOWE *on what psychological theory and research can teach us about the effectiveness of group work in the undergraduate curriculum.*

THE tutor splits the class into four groups and gives each group the same task to complete, or topic to discuss. Perhaps the groups come one-by-one to the tutor's office and discuss the material under the tutor's direction. Perhaps they occupy different corners of a large room while the tutor sits at the front and does some marking or wanders the room chipping in wherever needed. At the end of half an hour or so, the class comes back together to discuss the topic. Common scenarios – but how can we use psychological evidence to ensure every student actually learns as best they can from this approach?

Extent and aims

Four years ago a survey showed that group-based teaching, where undergraduates are expected to interact in the interests of learning, accounts for up to 40 per cent of formal provision during the junior years of psychology degree courses (LTSN Psychology, 2000). A second survey indicated that the contribution of interactive group work can be as high as 70–75 per cent in the final years of the undergraduate curriculum.

Equivalent surveys for the ASTER project (e.g. ASTER, 2001) indicate a similar situation in other HE disciplines, including the humanities and the physical sciences. Regardless of discipline, it transpires that most group-based teaching at present is face-to-face. However, computer-supported provision is increasing, via online discussion (e.g. e-mail, bulletin boards, video-conferencing) and around electronic resources (e.g. multimedia, the web, simulations).

The ASTER research shows that teachers in HE have a variety of aims for group work (see box). By and large, teachers feel that these aims are addressed via current arrangements, and accordingly place a high value on small-group provision. For instance, one of the above surveys requested ratings of how crucial small-group teaching is to the overall learning process. The mean rating (for all year groups) was 5.64 on a scale of 1 to 7 (with 7 being very crucial). One respondent pointed out that 'students feel very isolated if they never meet the staff in small groups' and that 'the small group provides all sorts of opportunities not occurring in other aspects of the course'. It was further observed that 'students respond favourably to the diversity of teaching methods'.

Yet despite the high value placed upon group work, there is a cloud on the horizon. Both the LTSN and ASTER surveys identified perceived problems with student engagement, tutor skills and sheer availability of space and time. Moreover, there is a sense that group work bears little resemblance to its historical antecedents – the 'Socratic dialogues' of the ancient Greeks. The emphasis of the Greeks was on interaction with a 'master': this was perpetuated in medieval institutions and continues occasionally to this day. One respondent to the LTSN surveys stated that tutor-to-single-student arrangements were commonplace in his department. However, this was exceptional. Most respondents reported considerable dilution of both the master–apprentice relation (as postgraduates are increasingly involved) and the one-to-one relation (as ever-expanding numbers are incorporated in a group). Groups of 21 or more students were reported in 47 per cent of departments. Again, it is highly unlikely that this is specific to psychology.

Nevertheless, sensing problems is a far cry from articulating these and initiating reform, and many HE teachers feel poorly placed to take either step. In recognition of this, LTSN Psychology recently commissioned a review of small-group practice at the undergraduate level. The review (Bennett *et al.*, 2002) spells out what current research (theoretical and empirical) suggests about productive group work; that is, what forms of interaction and student attitudes are helpful, and how these should be fostered. Current practice is evaluated, and possibilities for improvement (including via computer support) are addressed. Sponsored by LTSN Psychology, the review focuses upon the teaching of psychology, but much of the cited research addresses other HE disciplines. Since the research is also typically conducted by psychologists (including the LTSN Psychology team itself) or follows psychological traditions, the review is highly relevant to our current

AIMS OF GROUP WORK

- fostering communication
- team building
- computer literacy
- time management
- independent learning
- data analysis
- critical awareness
- problem solving
- research competence
- discipline-specific knowledge

Source: ASTER (2001)

theme of how psychology can revolutionise higher education, so let's turn to some of the major conclusions.

Two approaches

The LTSN review unearthed a great deal of research concerned with small-group provision in HE contexts. However, the research frequently proved difficult to interpret. For one thing, it is often atheoretical. Typically, a favoured method is felt by some practitioner to be 'working', and an evaluation (sometimes, but not always, controlled) is carried out to demonstrate that intuitions are well founded. At best, the evaluation attempts to identify the factors that underpin success, and these factors are related *post hoc* to theory – but the research itself is not theoretically driven.

In addition, the theories that might be used turn out to be limited, for there is no model that covers all components of the small-group context. Sociocultural models derived from Vygotsky address tutor–student interaction, but their principles presuppose the traditional master–apprentice relation. They are vague about how many 'apprentices' can be added before the situation becomes impossible, let alone how apprentices should behave towards each other. Ideas about student–student interaction can be obtained from motivational, cognitive and social cohesion accounts, operating in uneasy coalition. However, apart from ignoring tutors, these accounts have little to say about how student behaviour varies with task.

Piecing findings together to draw conclusions is a further challenge, even when theories can be brought to bear. This is partly because the meaning of group activity is as significant as the activity itself. The research indicates that rewarding group performance (for example by grades) should not be necessary given the contexts within which HE group work typically occurs, but students perceive rewards as relevant and this may matter. In general, postgraduate tutors are more effective than academic staff at facilitating what in other circumstances should be productive interaction. However, their impact may be nullified by undergraduate expectations that staff will know more.

In addition, the relevant factors interact, and what is productive in one context may be unhelpful in another. When the task is demanding and controversial, direct intervention from tutors should be minimal and extrinsic rewards will be unnecessary. When the task is mundane, tutor intervention will be essential, and rewards may be helpful. Other work indicates that mixed-ability arrangements stimulate debate and are probably helpful for students at the top and bottom of the ability range; whereas middle-of-the-range individuals may gain more from homogeneous arrangements.

Philip Wolmuth (reportdigital.co.uk)

Groups of no more than six students are luxuries that many HE departments can ill afford

'mixed-ability arrangements stimulate debate'

Nevertheless, despite the uncertainties, LTSN Psychology's review was able to reach a number of conclusions concerning two possible approaches to group work: the traditional group structure and collaborative projects.

The traditional group structure

Where tutors orchestrate the interaction, traditional groups can potentially add value, so long as the number of students does not rise much above six. Whether it adds value in practice depends on

- tutor behaviour (avoidance of dominance, avoidance of restating what students say, adoption of an explanation-through-feedback style);
- student relations (mixed ability, cohesive – perhaps through ice-breaking exercises, equality of participation); and
- task design (personally involving, challenging, concrete – physical materials as well as talk).

Unfortunately, groups of no more than six students are luxuries that many HE departments can ill afford. When departments are hard-pressed, the literature suggests that rather than persevere with a tutor-led approach (which is what normally happens in even the most adverse circumstances), students should be split into smaller groups (again around six) to work with minimal intervention on collaborative projects that have concrete (possibly assessed) outcomes.

Collaborative projects These should be genuinely group-based (e.g. students might work on different aspects and pool ideas). Projects should be intellectually challenging and personally engaging, but (in contrast to tutor-led groups) also controversial and amenable to debate. Searching and synthesising literature might provide opportunities, as might designing empirical studies or producing research-based resource packs for practitioners.

The role of tutors should be limited to introduction, advice upon request and (possibly) assessment. Intensive involvement is not simply unnecessary, with this approach it may actually be counterproductive.

Looking ahead

It is impossible to say at present whether either of the two approaches described above is better; that is, whether well-resourced departments should on occasion follow the second model, or whether less-favoured departments should lobby for more resources to provide traditional

teaching. What is clear, however, is that, to the extent that either approach is beneficial, the benefits are likely to be as strong in computer-supported environments as they are in face-to-face settings. The LTSN review found no areas where the principles governing effective deployment differed between the two contexts.

Even the cut-off between sizes of more or less than six appears relevant: large online communities split spontaneously into smaller groups to achieve optimal size, or feel uncomfortable when division is impossible. Where computer-supported environments differ from face-to-face is over the ease with which the governing principles can be applied. Application is sometimes easier with computers, owing to, for example, reduced tutor dominance: Anderson *et al.* (2000) illustrate how computers can seamlessly 'chair' tutorials around research methodology. However, application of principles can also be more difficult with computers because of technical challenge or the need for training.

If the principles governing effective group work are robust across environments, the implication is that research in the area is unlikely to be compromised by technological advance. This is encouraging, because considerable work remains to be done. Mention has been made already of the limitations within current research. The limitations continue even when consideration is given to psychological work that does not examine HE directly, for example social psychological investigations of group processes. Thus, while scrutiny of the psychological literature highlights more, or less, promising approaches to group work, psychology should not be viewed as holding the knowledge base to revolutionise practice at this point in time. Rather, as with many topics explored in this special feature, psychology supplies hypotheses that can be tested through application in HE contexts. Importantly, by virtue of being tested, these hypotheses can inform psychology itself. This, surely, is the crucial point: group-based learning is not simply a key human practice that applies both to HE and, via workplace training, to life in general; it is equally a significant opportunity for psychological research. The ideal scenario is, therefore, that psychological knowledge should be applied even when it is not capable of revolutionary consequences, so that educational practice and (via controlled, theory-driven evaluation) disciplinary understanding can both move forwards.

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PERSONAL SPACE

CHARLES CROOK *wonders whether universities are really…*

Ripe for a virtual revolution?

Undergraduate life 1600:
Texts, Lectures, Scholastic disputations, Collegiate fellowship and, finally, Determinations.
Undergraduate life 2000:
Texts, Lectures, Seminars, Campus community and, finally, Examinations.

CHANGING terminology perhaps, but some very robust practices. This resilience in the university curriculum seems odd. We now travel differently, fight differently, cook differently; why, it might be asked, don't we now learn differently? Why, in particular, has our learning not been more significantly altered by information and communication technology (ICT)? Why does it all remain so… well, so 'medieval'?

For the generation of university teachers about to retire, the promise that ICT is poised to transform educational practice must sound very familiar. Yet our arenas of teaching and learning remain strangely undisturbed. Perhaps this is an illusion: perhaps something has happened but we have missed it because of the creeping and subtle nature of the changes. Alternatively, and equally undetected by us, perhaps a momentum has been gathering and is about to be released – anticipated by excited talk of 'e-learning' and 'virtual universities'.

This just-round-the-corner empowerment sounds convincing. In particular, pervasive and broadband computer networks do seem to represent something radical: a real shift in the underlying ICT toolkit available to educators. Moreover, the ubiquitous internet will surely deliver a generation of learners that are comfortable and receptive to such new modes of communication. But networks are merely about *infrastructure* – and its accessibility. Is how a learner confronts material really going to be transformed by such information shuttling? If so, can we shortly expect a transformation in the very *experience* of learning: an early cultural success for the modern agenda of virtualisation?

Recently, I have conducted research around some of these questions. I will here draw on that work to consider limits in what might be expected (in the short term at least) from the 'virtualising' of higher educational practice. Some of this research arose from a project that Paul Light and I were involved with under the ESRC's 'Virtual Society?' programme (Crook & Light, 2002). In that work we adopted an ethnographic approach to undergraduate study: considering how it was typically embedded in a wider institutional culture of learning resources. And, in particular, we explored how the activities of study were adapting to the challenges of new technology. In one campus we researched, considerable effort had been invested in electronic communications. All study bedrooms had generous access to internet and intranet facilities. Moreover, all taught campuses had space on that intranet to exploit web-based presentation and communication tools.

I shall discuss here the four arenas of teaching and learning identified at the start of this article for their resiliency: text, lectures, seminars, and institutional community. For each we can ask how it is being 're-mediated' by new technology: Are these learning arenas changing, or even being mediated out of useful existence?

Anticipating my conclusion: there are significant changes going on in the way we teach and learn in higher education. Not the radical changes of virtual visionaries perhaps, and that shortfall is interesting. But – and this is the important point – these changes could be better understood and managed with more active involvement from psychologists.

Text

Undergraduates still seem to find ideas about their subject most accessible in print. We asked a random sample of students to keep a weekly diary, recording activities down to a 15-minute resolution. It was apparent that much private study remains the reading of text. So what forms of re-mediation by ICT are to be expected in the case of printed text? Perhaps three: compared with traditional text, electronic media promise greater diversity of representational form, more flexible access, and enhanced interactivity.

Diversity Learning that becomes electronically mediated will surely be based upon more diverse formats of representation. Specifically, it is expected that learning will be greatly enlivened by 'multimedia' materials. Yet resources of

WEBLINKS

Outstanding web use in universities: *www.nyupress.org/professor/webinteaching*

Challenging the 'vision' of virtual higher education: *www.firstmonday.dk/issues/issue3_1/noble/index.html*

What happened when UCLA demanded a webpage for every course:
chronicle.com/colloquy/97/webclass/47a02101.htm

California Virtual Campus: *www.cvc.edu*

MIT Open Knowledge Initiative: *web.mit.edu/oki*

this kind remain scarce: they are hardly displacing traditional texts for undergraduate study. I believe there are at least two reasons.

The strategic issue concerns the politics and economy of publishing. Multimedia learning resources are challenging to compose and expensive to produce. The scholarly author who can readily write 8000 words on attachment theory for an edited textbook might baulk at the idea of assembling a multimedia version of the same commission. Certainly, collections of this kind do seem to have faltered: they have not been widely successful and their shelf-life seems short. Yet the components of a multimedia publication are potentially precious assets for a teacher: I am thinking of the video, the audio, the animations, and so forth. In my view, the academic community should not be sponsoring multimedia texts but producing and circulating their raw multimedia ingredients. A library of such resources could then be called upon by individual teachers to enrich their PowerPoint presentations, websites or other modes of local teaching and learning resource.

The more psychological obstacle to multimedia 'texts' is the demands made by the vehicle for delivering this format. Put simply, the materiality of the traditional book seems to be its great strength. Eventually, perhaps, we will all be able to 'read' a screen device in the bath, in bed, or on the boundary of a cricket game. But we cannot easily do this right now. In general, screen-based technologies compare poorly with print – they deny students the necessary browsing, scanning and annotation.

MEHAU KULYK/SCIENCE PHOTO LIBRARY

Access Electronically re-mediated text promises to liberate us from the narrow reach of our personal or institutional libraries. Attached to the internet, the e-learner has potential access to a vast global archive (subject perhaps to their institution's generosity of subscription). Without doubt this is a valuable new privilege. Yet it may be one of those ICT impacts that are creeping and invisible, for we do not seem to notice these changes as radical. If the habits of the students we researched are typical, the reason may be found in a point made above: a resistance to screen reading. Most resources that our students wanted and that were delivered to their screen, they promptly printed out on to paper. In short, if a learning resource is text-and-pictures, it seems we simply do not want to engage with it through the window of a computer display.

Interactivity Is a vividly illustrated multimedia resource about, say, psychopathy necessarily more challenging and less didactic than its print-based alternative? Surely, this depends on whether the new medium successfully invites exploratory interaction on the part of the student. Often it may not. Again, there is an opportunity here for psychology. We need to understand more about how the media richness of learning materials can be designed to maximise the learner's outward explorations (and inward reflections) – to understand whether and how new media encourage active engagement rather than passive delivery.

There is other interactivity afforded the e-learner that is less characteristic of learning from traditional print: interactivity that is more about mobility *between* materials than within them. The networked PC allows a student to move in and out of resources, to pull remote documents on to the computer desktop, to navigate quickly between them. Admittedly, all study environments are potentially 'multitasking' in this sense. However, when we monitored our students' activity on networked PCs during study episodes, it seemed that the ease with which this technology allows the user to shift focus was rather alarming. Indeed, many students expressed concern at how frequently they found themselves victim of distraction, as they strayed from some study project in and out of e-mail, message systems, browsers, games, media players, and so on (Crook & Barrowcliff, 2002). Again, psychologists need to help here, to theorise and investigate learning as cognitive activity – including the management of attention and multitasking.

Lectures

In any brave new world of virtual learning, it is hard to think of a more vulnerable form of educational practice than the lecture. To the virtual critic, lectures are typically non-interactive monologues that shackle learners to passive attendance at particular places and particular times. Yet are they really always that bad? Surely we all recall lectures that have engaged us: that have provoked a stimulating mental debate with the lecturer. Psychologists should help us understand the forms of expositional rhetoric that are effective in prompting such private dialogues – research that might help teachers decide what to protect or cultivate in their style. However, let us suppose lectures must be re-mediated for the e-learner. What new forms of 'exposition' might be designed through technology to liberate the traditional student?

I have investigated two – both designed to preserve the live occasion of the lecture while rendering it more comfortably accessible to the 'flexible learner'. The first arose from a blind student's request to have audio recordings of a lecture series. I chose to make these recordings available to the whole class immediately after the session on the course website. Moreover, I was able to link the recording with lecture visual aids, as they were routinely reproduced on that same website. Would this initiative expose the live event as actually superfluous? No. Attendance remained similar to that of matched courses with no such recording. Indeed website system logs revealed that although the course site itself was widely accessed, the recordings were not. Later, students with easy in-their-room access commented that listening to a lecture in that setting seemed oddly uncomfortable. Taking notes was awkward, attention was hard to sustain. They also noted that participation in the live event was something they did not wish to lose. It reminded them of shared goals (and burdens), and the space around the event afforded off-the-cuff collaborative conversations.

Perhaps a more commonplace way of re-mediating a lecture involves making a

text version of the event available as a network document. Such lecture-notes-on-the-web are derided by ICT aficionados. But our research suggests they are very popular with learners. In a student-centred culture of practice, this consumer demand may be enough to stimulate their provision. Well intentioned though such provision may be, we still need to investigate how access to such an electronic resource shapes learning. I recently reported a study that hints at problems here (Crook, 2002). Pairs of students were recorded during a number of informal sessions as they collaboratively revised a lecture course – either using their own individual notes from the sessions, or using a computer-based set of notes furnished by the lecturer. The computer-based notes were less effective in keeping the students on task and promoting exploratory discussion. It is tempting to extrapolate from the collaborative example, in which case there is a concern that private study from web-based lecture texts may be similarly taxing, cultivating a rather instrumental approach to learning.

Seminar discourse

Virtualisation innovators often celebrate the learner-centred nature of their agendas: the re-mediation of text and lecture is often framed in a rhetoric of student autonomy or liberation. Yet I have argued here that this autonomy may be hard to provide, hard to sustain. However, there is another rhetoric of e-learning which seems to appeal to an opposite attitude of study – one that is more collaborative than independent. Virtual learning, it is claimed, can be made interpersonal, more about communication than isolation.

If virtual learners are to protect their flexibility of time and space, then any computer-mediated communication has to be asynchronous. That, so far, has meant learners using tools for posting messages on discussion boards. This may work well enough for dispersed distance learners who enjoy little opportunities for face-to-face encounter. However, we have found that traditional full-time students take to this mode of e-learning rather reluctantly.

One problem is that is just feels strange to have a text conversation with people that you might expect to see regularly. Consequently, the contributions seem assimilated to a model of exchange based on essay writing rather than conversation. Text turns in this exchange start to become carefully composed and self-consciously crafted. Unfortunately, any participant who slips into something rather less planned and formal may only then discover the unforgiving nature of a text display – something that remains hauntingly visible to others.

In our highly networked campus site, all students enjoyed e-mail accounts and all course websites included a text discussion tool for those enrolled. We found that e-mail was rarely used with peers or staff for academic debate – although it was widely used recreationally and for exchange of routine course organisational matters. Moreover, most of the course discussion boards remained unused. Such observations are not fatal to prospects of re-mediating seminar discourse, but they hint at obstacles to virtualisation – at least as gently applied to the traditional campus communities.

'not one of them showed any interest in swapping or starting again the virtual way'

Institutional community

'Community' is the final resilient element of educational practice for consideration here. Up until the present generation, it has been assumed that higher education normally occurs in a setting that allows a sharing of student experience. In practice, this has meant a common 'campus' ritual of timetabled teaching, learning and assessment, and of course an option for informal collaborative exchange with fellow students. However, enthusiasts for e-learning often challenge the inevitability of this version of a learning community. Successful distance universities seem to reinforce this idea, but they do not normally recruit from the constituency of young school leavers – where motivation for and experience of independent study may be less developed.

In our research we asked students whether they would consider virtual learning – free of bricks and mortar constraints – as an alternative to the route they were now on. Although they understood what this e-learning involved and they understood the economic and inclusion arguments to justify it, not one of them showed any interest in swapping or starting again the virtual way. Their reasons certainly identified the extracurricular opportunities of full-time study. But students also spoke of the manner in which the discipline of timetables and deadlines kept them engaged. The visibility of study resources and the proximity of fellow learners were also prompts to sustain the effort of learning.

It would be a romantic vision of student life to suggest that the institutional setting was thereby catalysing vigorous and coordinated peer collaboration. Our records suggest this is rather rare. But this does not mean that, more generally, community and shared experience is not exploited by students. There was much serendipitous, if brief, exchange about common predicaments. Opportunities to benchmark progress, to whinge and to reassure – all seemed a key reward of participating in a traditional institutional learning community.

Conclusion

Why has the way we learn proved so resilient? And what prospect does there seem to be that it will be reconfigured by virtualising innovations? If there is resilience of educational practices in the face of ICT, I do not believe that this reflects Luddism on the part of academics. Computers certainly do figure in much that they and their students now do: notably the familiar desktop tools of composition and computation. However, if text, exposition, disputation and community are resisting virtual re-mediation, it may be because they define practices into which incoming students have been too thoroughly encultured in their out-of-school lives. Reading, listening, talking and shared experience surely ground our informal learning in very convivial ways, and some of the innovations discussed above may lack these comfortable qualities. Instead they may inadvertently violate an important continuity. Formal education may often 'work' because it appropriates the convivial modes of communication characterisic of everyday life – subtly populating them with the concerns of academic disciplines. This seduction works well. But, of course, 'everyday life' may change. In particular, modes of informal communication may increasingly involve virtualising technologies – at which point this article will need some revising.

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