'Widening access and success: learning and new technologies in higher education'
Interim findings of a Kingston University research project.

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1. Introduction:

In this presentation we will describe the methodology and present some interim findings from a research project being undertaken at Kingston University (KU). The project is externally funded, and due to run until September 2004. It aims to investigate the effectiveness of the use of information and communications technologies (ICT) to improve participation in higher education (HE) by students from more diverse backgrounds.

The background to this project is an increased emphasis on the exploitation of ICTs as part of national priorities for teaching and learning (HEFCE 2001), and the government's objective of 50% participation in higher education by 2010. While claims have made both in support of and disputing the potential of ICTs to tackle the challenges of increasing student numbers and teaching a student body that is becoming more diverse in terms of their learning patterns and needs, these arguments have centered around the notion of 'access'. Access to ICTs, however, as Selwyn and Gorard (1999), point out, 'is not the whole story', and interest is now turning to 'the culture of ICTs' and its role in terms of enabling or impeding learning for non-traditional students. To date, however, there is little conclusive research in the ways ICT can impact on different kinds of learning (MacFarlane 2002).

2. Scope of the research

This project aims to shed light on some of these questions. It explores how ICTs are interacting with the learning and teaching process, in the context of undergraduate programmes supported by a VLE (virtual learning environment), on the one hand, and in the context of an e-mentoring scheme involving KU and local FE colleges, on the other. In both cases, there is a specific focus on 'non-traditional entrants', principally mature students and persons without a family history of higher education.

The investigation centres on a specific ICT product, the Blackboard VLE, the planned and comprehensive introduction of which forms a key element of the teaching and learning strategy at KU. The strategy intends the VLE to support, rather than replace, a range of conventional teaching activities. The Blackboard VLE is a commercial web-based software product with integrated sets of internet tools which allow the management of teaching materials, synchronous and asynchronous communication and email services. The VLE was piloted in 2000-1 and full scale roll out is due to continue until the year 2003-4. To date, a total of 1200 modules out of 3000 at KU make some use of the various functionalities offered by Blackboard.

The notions of learning at the core of project are informed by Laurillard's (2002) views of teaching and learning in HE and work on 'learning styles' and 'learning approaches' (eg

Entwhistle 2000). The project is concerned with both the individual students approach to learning, their preferred cognitive style, as well as the learning process broadly understood.

3. Research programme

The project has two strands: we refer to the 'pre-entry' part of the project as e-Access, and the 'on-course' strand of the project, as e-Success.

The overall aim of e-Access is to develop, research and evaluate the effectiveness of ICT, in increasing participation in HE from underrepresented groups and improving preparedness. The research seeks to elucidate how a VLE-based mentoring scheme can help change attitudes to and perceptions of higher education by students from underrepresented backgrounds; make more effective the negotiation of the HE application procedure by such students; and promote their development as effective and confident learners.

In stage 1 our main target group were students on Access courses on Humanities and IT pathways. In stage 2 we will include year 12 and 13 students from families without a history of higher education.

E-Success aims to develop, research and evaluate the effectiveness of ICT in improving on-course support for a more diverse range of entrants into the University. We will explore: the use of the VLE to support staff in profiling new students to identify gaps in knowledge, understanding and skills; the potential of the VLE to support students in becoming effective learners while accommodating a variety of learning styles; the potential of VLE-based learning and teaching to support and improve the satisfaction and retention of students from a diverse range of backgrounds; and how a VLE-based mentoring scheme may support students from under-represented groups during induction and on-course.

The study is multimethod in character: it will make use of survey data, evidence from discussion boards, case studies of individual members of staff and detailed discussions (in focus groups and individual interviews) with students and staff on level 1 modules. It will draw on on-going research (into the use of Blackboard, issues of retention and student satisfaction) within in the university.
Stage 1 of the project (July 2002-October 2003) is more exploratory and is laying the ground for a larger, and more quantitative study in stage 2 (October 2003-September 2004). The aim of stage 1 has been to identify the institutions, specific modules and courses, that would be the subject of the research; and to develop an understanding of the context and current practice in the university and colleges.

The mentoring schemes will be evaluated by means of individual interviews with relevant staff in the faculties, colleges and schools concerned; group and individual interviews with students; evidence from Blackboard in the form of threaded discussions and user statistics; group discussions with and regular e-mail feedback from mentors, and mentors' diaries; an end of semester questionnaire to mentees.
Stage 1 has sought to evaluate the adequacy of various elements of the scheme, as well as supporting its development. In stage 2, we will be evaluating the VLE-based mentoring against the objectives mentioned above.

The findings presented below are from series of semi-structured interviews conducted with staff in two faculties within KU; groups discussions with mentors (3); semi-structured interviews with

students in the same faculties (4); informal discussions with key informants in faculties among students and staff.
With regards to e-Access, our findings are based on series of interviews with members of Access course teams (10) in three colleges, paired interviews with Access students (6) and group discussions with Access students (3) and mentors (2), and informal, ad-hoc exchanges with Access students and mentors, regular e-mail feedback from mentors; and weekly 'visits' to the Blackboard site.

4. Staff's use of the VLE:

There is great variation in the uses that staff has made of Blackboard across the university. The use of the various functionalities offered by Blackboard are contingent upon the individual member of staff's sense of competence and experience with various media, the time available to them to develop the requisite skills, the nature of the course, the extent to which Blackboard can deliver the kinds of materials used on the course (for eg programming languages or symbolisation), besides individual members of staff's attitudes towards the role of technology in education.

At present, it is estimated that out of the 1,200 live modules at KU, 50% use the VLE as an 'electronic bookshelf' or a 'convenient filing cabinet', principally to distribute course materials[i].

More complex uses of Blackboard are found in the top 10% of modules. Several of these modules will serve as case studies for stage 2 of the research. In the School of Music, for instance, one module has used Blackboard as a vehicle for a virtual instrument; the instrument, a Javanese Gamelan, is intended to be used by students to practice their aural skills, in ways and at paces that best suit them. The objective is to cater for students who have come with different musical backgrounds and to allow for an economy of learning, on what is a very demanding course. In the school of business, Blackboard is being used to deliver a course to students in different locations (KU and a number of local colleges), with very diverse backgrounds (academic and personal) and studying for different qualifications (hnd, hnc and BaBM). The aim here being to 'homogenise' the learning environment for students in these very different sites. Other examples of such use include the creation of a 'poetry forum' in a level 1 English literature module, where students have been posting, anonymously (and quite spontaneously), their own work; and a Business and IT module, where the discussion board has been used as the exclusive means of communication by students and staff.

Students' use of the VLE reflects staff's pattern of use, with over 50% reporting never using the discussion board or group areas (Student Blackboard Survey February and May 2002). Often the root is not unfamiliarity by students with the environment – indeed, students interviewed have reported exploring the various areas of their Blackboard modules and finding that many of the facilities had not been used.

Changing practice or supporting existing teaching praxis?

The extent to which Blackboard has been a 'disruptive' as opposed to a 'sustaining' technology (terms from Daniel 2000) varies.
A survey carried out in May 2002 found that staff's use of the VLE tended to replicate the use that staff generally made of other ICTs, in particular, using internet based tools to reference website, email for the submission of student coursework. Chat, instant messaging and the use of discussion boards however featured poorly.

In contrast, other members of staff have felt that the VLE **has** altered their teaching praxis; many report an increase in preparation time, and a number have expressed that the VLE has made a positive contribution to their teaching in forcing them to reflect on their teaching practices. Not all lecturers have welcomed the introduction of Blackboard, however, and the occasionally strong feelings we have encountered is indicative of the changes that Blackboard is bringing to particular areas of teaching or ways of teaching.

Balancing face to face and e-teaching

One of main concerns of staff is the balance of 'face to face' and 'self-managed' learning and the implication of the VLE for this balance. The view is that Blackboard may be discouraging attendance at lectures, seminars and workshops among students; with adverse consequences on the student's learning as well as the teacher's ability to gauge the student's learning needs and level of engagement with the course, informally. For the most part, staff did not feel that the electronic medium could adequately replace face to face interaction as a means to profile students. Even where some formal profiling is carried out, it is for the most part 'paper based', and does not make use of tests (a form of profiling that best lends itself to being carried out through Blackboard), but involves a more qualitative approach. The electronic medium was not felt to add any value to the exercise.

In a minority of cases, the 'user statistics' in Blackboard – which include the number of accesses per area (content, communications, group areas) for each student on a module; the number of accesses over time, per hour of the day and per day of the week, again, for each user and the number of times a given message has been read – were found to be a meaningful source of information on students. One member of staff explained that on his module statistics were used to 'check how much listening is going on'; while another reportedly would 'check attendance' by referring to these statistics. In both cases, these member of staff were familiar with web technology, and ran modules where student participation in/use of the discussion facilities was expected.

Changing conceptions of learning and learning relationships – 'spoonfeeding' and 'netiquette'

Another concern for staff is the impact of ICTs on modes of communication appropriate in an educational setting. Staff expressed a need to instruct students not simply on how to use the various communication tools within Blackboard, but also what constituted an effective use of these tools: choosing appropriate titles for postings; signing their name at the bottom of emails; timing of responses (not 24/7); not using 'txt' language; using 'appropriate forms of address'.

Staff were concerned, too, that Blackboard was affecting students' conceptions of learning, possibly reinforcing a 'spoonfeeding' and 'consumerist' view of education, and further discouraging students from attending lectures, seminars and workshops. Any link between the VLE and students' views and attitudes towards HE is as yet unproven, and awaits further investigation.

5. Student's use of the VLE

An integral part of the learning experience at KU:

Much evidence suggests that Blackboard is becoming an integral part of the student's learning experience and expectations at KU. A KU student satisfaction survey (May 2002), found that 'Blackboard received positive comments from many for the ways in which it improved

communication between lecturers and students. A small number expressed their frustration that not all modules were available with adequate support'. We found that the presence or absence of a VLE was used by students to evaluate other HEIs; and the use that staff made of Blackboard was used as a means to gauge the 'quality' of different lecturers. This is consistent with findings of a Blackboard student survey (May 2002), which revealed that a large source of student dissatisfaction with Blackboard was the provision of 'insufficient content' in Blackboard modules. In one case too, Blackboard content was the standard against which a face to face lecture was judged.

Combining screen- and paper-based learning – questions of access?

Interviews with students have questioned our views of students' usage of the VLE. Some students will browse on-line during repeated visits to their Blackboard module while others will download the materials during a 'one-off' visit. The use of Blackboard, decisions to work on or off-screen are guided by such considerations as the size of files on Blackboard and the space available on a student's home computer as much as individual preference and access to hardware and/or printing facilities, and the costs of printing.

The VLE in learning: alternative source or complementing 'conventional' activities?

Besides 'content', the feature that students found most valuable was the 'announcements facility'. Notification of the cancellation of a lecture, for example, would spare a student the time and cost of traveling to university.
For several of the students interviewed, face to face teaching was seen as one among a number of learning resources; one student reported that he and his peers would attend lectures when 'we don't understand something' or if the course was 'difficult'. The remainder of the time, they would simply use the notes provided by the lecturer on Blackboard. For these students, Blackboard material did not constitute a support or complement to other teaching and learning activities but represented an alternative, and both face to face sessions and Blackboard would be drawn upon flexibly as the student felt was necessary. In these instances, the VLE was used by students as a means to 'manage their own learning'. For others, by contrast, Blackboard is a 'back-up', to check on their own note taking, a means to 'go over' material, and only a primary source when they are unable to attend face to face sessions.

What is clear is that a key advantage of Blackboard, as far as students are concerned, is the fact that it is 'plugged into' university life. (cf Alsop and Tompsett 2002).

6. An e-Mentoring scheme at KU: e-Success

The scheme:

Another part of our work in stage 1 has been to facilitate the development of an e-mentoring scheme within the university.

Mentors were level 2 and 3 students at KU in the fields of English Language and Sociology. Mentees included level 1 students in the same fields. Mentors were 'added' as users to the Blackboard modules they were mentoring. A discussion area for all mentors (named the 'mentors' area') and mentors and mentees ('student café') were created in the two Blackboard modules.

In Sociology, the scheme operated as a weekly drop-in face to face sessions, intended to be backed up by electronic communications. Despite the mentors' efforts to encourage students to contact them by means of email or the discussion fora in their Blackboard modules, we were not successful in developing the electronic component of mentoring in sociology. This scheme remained, by and large, a face to face rather than an 'e'- scheme.

In English, mentoring groups (one mentor and four to five mentees) were created and assigned their own virtual group area and discussion board. Mentoring was to take place mostly by means of email and discussion boards, and the occasional face to face meeting. At the request of mentors, the face to face element became a more significant component of the scheme. A room was booked by the faculty for a two hour slot once a week as a venue for face to face sessions, to be used as mentors and their respective mentees saw fit.

Using electronic media in mentoring:

For the most part, communication between level 1 students and mentors has been by means of email, and often, but not exclusively, to arrange face to face meetings. The use of the discussion boards by mentees was rather modest; while some reported having read the messages posted by mentors, no mentee contributed to any of the discussion boards. Mentors on the other hand, increasingly used the discussion board in the 'mentors' area', sharing e-mentoring strategies or making 'housekeeping' enquiries. For mentors, the electronic component of the mentoring held clear benefits, and certainly, the flexibility in mentoring hours was one of the factors that attracted a number of mentors to the scheme, particularly students with dependants and those in full time employment.

Raising awareness of mentoring:

An issue with many voluntary mentoring schemes is the low levels of student participation (King 1994). Here, the small numbers of mentees expressing an interest in e-mentoring activities, was attributable to lack of awareness of the scheme as well as views of mentoring as 'remedial' and of peers as a 'second best' source of knowledge and learning when compared with lecturers. Rosie (2002) points out in relation to a mentoring scheme at Sheffield Hallam University, that different approaches suit different kinds of students. This was undoubtedly the case here, but the need was felt to inform students of potential benefits of mentoring.

As a result, semester 2 saw a more vigorous publicisation and 'debunking' campaign, with mentors sending repeated emails to mentees (up to six times), and introducing themselves to level 1 students in lectures. Perhaps one advantage of the electronic medium, has been the ability to draw attention to the scheme, repeatedly and 'in person', in a way that would not have been feasible without the technology. Overall, e-contact between level 1 and level 2 and 3 students has outnumbered instances of face to face contact between these groups, within a mentoring relationship or outside of it.

Different media for different aspects of mentoring:

We do not have sufficient data as yet to comment on the kinds of issues that lend themselves to being handled and resolved electronically, but we are sensitive to the fact that not all issues will be equally amenable to being addressed on-line. Some mentors have already pointed out that going through someone's assignment as they would in a face to face setting, but becomes a very lengthy process by email. It is likely that e-mentoring will involve a variety of media for interaction, including email communications, face to face meetings and use of the discussion board.

7. FE-HE e-mentoring: e-Access

The scheme:

The scheme was developed through discussions with members of academic staff at KU involved in mentoring in the past as well as discussions with access tutors and coordinators in colleges. Mentees were students on Access courses in KU associate colleges in IT and Humanities or Social Sciences. In each college taking part in the project, access tutors and coordinators selected an entire cohort of students for mentoring. Mentors were mature students on level 2 and 3 courses in IT and the Social Sciences at KU, and most came to HE via an Access route. Following an initial face to face meeting between mentor and mentees, mentoring was to take place for the most part by means of an electronic medium, e-mail and discussion board in a Blackboard module created specifically for the purpose of mentoring. Mentoring groups counting one mentor and up to eight mentees, were formed and given their own group and discussion area within the Blackboard module, and were expected to communicate weekly.

Access ethos and membership of mentoring groups:

Consistently with the ethos of access and its emphasis on collaborative modes of learning, the most significant learning resource and reference group for mentees were other access students. Accordingly, mentees were keen to broaden membership of mentoring groups to include students on access courses in other colleges.
The undergraduate mentor, on the other hand, was seen as rather more distant and less relevant to their learning needs at this stage. The presence of the mentor was felt to be a useful resource at certain key times, but not necessarily on a weekly basis.

Synchronous vs asynchronous communication:

While existing e-mentoring schemes[ii] make use of email to support communication between mentor and mentee, and we had intended the discussion board to play an important role in these activities, students involved expressed a preference for synchronous rather than asynchronous discussion. This reflects their current usage of virtual environments. The students felt that having a weekly virtual office hour when mentor and students in other colleges would be in a single 'chat' environment, would be a better format for e-mentoring.

The context of mentoring: institutional commitment vs individual approach

A key lesson from e-Access this year, has been the realization of the demands of an institutional approach to mentoring. In stage 1, we sought to involve staff and the institution in the running of the scheme, specifically, asking help from staff in terms of ensuring access to computers for mentoring purposes; in designing the Blackboard module and materials developed to support mentoring activities. While Access tutors welcomed our intentions to include them in the scheme as far as possible, the logistics proved difficult.
In stage 2, we will adopt a more individual approach to e-mentoring, where no commitment is expected from the institution, but where e-mentoring is presented as a voluntary, one-to-one relation between a mentor and a student/pupil.

8. Final remarks

The most salient 'fact' to emerge from our research so far, is perhaps the fact of diversity – diversity of media for learning and also diversity of understandings or conception of learning itself, which Laurillard (1999) lists as an important contextual factor affecting learning; diversity in terms of how students use Blackboard materials. There seems to be tremendous scope at present for students to manage or shape their own learning, with the face to face element being the central element or one of a range of equally useful and educational activities. The view that ICTs support more diverse modes of learning certainly found resonance here.

An important lesson for the project so far has been to push us to think in more nuanced ways about certain issues and practices. We have developed a better understanding of the ways in which Blackboard is transforming practice and understandings of this practice; of the limitations of Blackboard in profiling, either as a vehicle for conventional (paper-based) profiling methods or by providing another forum for staff to 'read' or 'check students' listening' and engagement with the course; we have refined what we understand by 'access' to IT (which can be a question of hard disk space and size of documents, as much as having a computer).

A key question for research in IT at the moment concerns the risk that IT presents in terms of creating IT 'haves' and 'have nots', and new illiteracies among the adult population in particular. We are not in a position to answer this yet nor can we comment on the impact of these changes on the effectiveness of learning.
In stage 2, we will be further exploring the various ways in which Blackboard is being used as part of learning, and seek to establish links between particular uses of Blackboard, learning styles and effectiveness of this learning. In relation to e-mentoring, we will also pay particular attention to the kinds of students that are likely to benefit from the service.

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[i] It should be noted that, consistently with university policy, the VLE is used for the delivery of non-essential materials while core materials are made available both electronically, through Blackboard, and by means of a paper handout.

[ii] See Bolam (2002) for an overview of mentoring schemes across the UK, including e-mentoring.