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Making the Connection in a Blended Learning Environment

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Abstracts

The presence of a virtual learning environment (VLE) in an on-campus setting can alter the dimensions of existing learning and teaching relationships. Research literature indicates that increased engagement with educational technology can have the effect of drawing staff and students closer together (both physically and virtually) rather than encouraging campus-based institutions to deliver more of their provision at a distance. This paper will explore how on-campus students can benefit from appropriate use of technology in ways that make them feel increasingly connected with their institution and their peers. Using qualitative data we explore how effective use of technology can help to bridge the physical gap between the students, their institution and their peers – even where the actual interactions between students take place offline – and how the combination of physical and virtual learning environments can be used to create an effective learning and teaching experience.

Etablissement d'une ligne dans un environnement de formation integré

La présence d'un environnement virtuel de formation (VLE) sur le campus peut changer les dimensions des relations d'enseignement et de formation existantes. La littérature de recherche démontre qu'une l'utilisation augmentée de la technologie d'éducation interactive a surtout l'effet de rapprocher le corps enseignant et les étudiants (aussi bien physiquement que virtuellement) plutôt que d'encourager les institutions basées sur le campus de transmettre leur services d'éducation de manière plus renforcée (Cairncross, 1997; Graetz & Goliber, 2002). Cet exposé démontre comment les étudiants du campus peuvent bénifier de l'utilisation appropriée de la technologie afin de se sentir plus apparentés à leur institution et à leurs camarades. En utilisant des dates qualitatives, nous explorons comment l'utilisation effective de la technologie permet de surmonter la lacune physique entre les étudiants, leur institution et leurs camarades – même si les interactions réelles entre les étudiants ont lieu dans milieu autonome – et comment la combinaison des environnements physiques et virtuels de formation peut aider à créer une expérience d'enseignement et de formation effective.

Die Herstellung einer Verbindung in einem integrierten Lernumfeld

Die Existenz eines virtuellen Lernumfelds im Universitätsbereich kann die Dimensionen der bestehenden Lern- und Lehrbeziehungen verändern. Die Forschungsliteratur beweist, dass ein gesteigerter Dialog durch Bildungstechnologie eher das Lehrerkollegium und die Studenten (sowohl physisch als auch virtuell) zusammenbringt, als dass es Hochschulen motiviert, eine höhere, flächendeckende Unterstützung zu bieten. (Cairncorss, 1997; Graetz & Goliber, 2002). Dieser Bericht belegt, wie Studenten im Universitätsbereich vom angemessenen Gebrauch der Technologie profitieren können, so dass sie sich zunehmend mit ihrer Hochschule und mit ihren Kommilitonen verbunden fühlen. Indem wir qualifizierte Daten verwenden, zeigen wir, wie die effektive Nutzung von Technologie helfen kann, die physische Lücke zwischen Studenten, ihrer Hochschule und ihren Kommilitonen zu überwinden – selbst wenn die tatsächlichen Interaktionen zwischen den Studenten offline stattfinden – und wie die Kombination physischer und virtueller Lernumfelder genutzt werden kann, um eine effektive Lern- und Lehrerfahrung entstehen zu lassen.

Introduction

This paper considers how a blended learning approach alters the dimensions of relationships between students and the other aspects of their learning experience. Using qualitative data from the evaluation of a large-scale virtual learning environment (VLE) implementation, we examine whether students learning in a blended environment have an enhanced sense of connection to their peers, tutors and institution that could

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be attributable to the specifics of the blend. The data upon which the paper is based is taken from the second phase of a formative evaluation looking at on-campus students' experiences with e-learning. This particular phase of the research used a diary/interview approach to generate data and during the analysis we explored whether blended approaches can encourage independent learning. As we examined the opportunities that were open to students and the ways in which students were making use of these as they progressed through the learning environment, issues around the nature of contact between students, staff and the institution began to emerge strongly from the data. The purpose of this paper, then, is to explore student engagement and interaction in the context of a blended environment. Looking at the students' accounts of their experiences, we examine some of the barriers that can prevent these connections being forged and some of the possible benefits arising from an integrated, blended approach.

In the first part of our paper, we briefly review the literature concerning the importance of relationships between students and the different elements of their educational experience. We then outline the context of the evaluation from which our data is drawn and describe our approach to the evaluation and the methods used. The final section of the paper concentrates on indicative findings and a discussion of how these can add to an understanding of what constitutes an effective blended learning environment.

Literature review

It has been suggested that an appropriate blended learning environment, combining virtual learning with new kinds of physical space, can restore the human moment in the educational process (Bleed, 2001). Bleed refers to Naisbitt's (1999) 'high tech, high touch' idea that increasing use of technology leads people to seek out 'high contact' situations, and research literature elsewhere indicates that, rather than encouraging campus-based institutions to deliver more of their provision at a distance, educational technology can have the effect of drawing staff and students closer together, both physically and virtually (Cairncross, 1997; Graetz and Goliber, 2002). Strong relationships built on contact and connection between students and the various elements of their learning experience are an important part of the educational process. While access to information is an important part of learning, intellectual development is largely achieved through active engagement and interaction with others (Palloff and Pratt, 1999; Laurillard, 2000; Garrison and Anderson, 2003). Chickering and Gamson's (1987) 'Seven principles for good practice in undergraduate education' (see also Chickering and Ehrmann, 1996) highlights the importance of encouraging contact and co-operation between staff and students, principles which are as important in the online as well as the on-campus environment. Skill and Young's (2002) analysis of an effective hybrid (or blended) model of education applied the seven principles to the design of effective learning spaces and talked about how an integrated approach can be used to 'empower' learners through encouraging contact.

Meanwhile, it is clear that students' engagement with academic and institutional life is also important in creating a sense of belonging and high involvement with peers, staff and academic work have been found to be important factors in facilitating retention (Astin, 1993). A report looking at retention and progression of first year students at Sheffield Hallam University found that a 'pervasive sense of being not fully "here" was evident among both respondents who said they were leaving, and also – to a somewhat greater extent – among those whose progress was found to be poorer than average' (Parmakis, 1997 p. 57). Retention, withdrawal and progress are, of course, complex matters. Individuals rarely leave for a single reason (Moore, 1995) and we do not wish to oversimplify the issue. However, integration and engagement with institutional life have frequently been found to be crucial factors (see, e.g. Tinto, 1994) in a range of situations. McGivney (1996), concentrating specifically on mature students, cites encouragement and availability of academic staff to be an important factor and emphasizes the importance of the creation of a sense of group cohesion amongst students, while Simpson (2002) states that within online, open and distance learning (ODL), increased retention will be largely linked with the enhancement and development of student support. Students who fail to establish appropriate support networks in ODL environments are more likely to withdraw than those who do not (Simpson, 2002).

Context

In 2001, Sheffield Hallam University (SHU) established the e-learning@shu Project as part of the institution's commitment to innovation in learning and teaching. The main aim of the Project is to encourage a culture of learning and teaching where appropriate use of technology is made to complement campus-based activity and an element of this pedagogically-led work involves overseeing the implementation of an institution-wide VLE, Blackboard. This blend or integration of the physical and virtual learning environments is central to SHU's strategic priority to exploit the potential of technology to enable and facilitate learning (SHU, 2000).

Adoption of Blackboard as a teaching tool is optional. At the time of writing (October 2003), nearly 1300 members of staff have chosen to enhance their teaching with Blackboard, which means that it now forms part of the learning experience for over 20,000 students. The aim of the evaluation – which is an integral part of the e-learning@shu Project – is to look beyond the statistics and investigate the depth of e-learning. It is designed to explore the impact that a blended approach to teaching can have on the student experience and to establish whether e-learning can add value to campus-based activities. It's purpose is not to look at individual courses or to establish whether students 'like' e-learning. Instead, it takes a campus-wide approach to evaluation and, rather than concentrating on the technology alone, it looks at how a range of elements fit together during a student's time at university. This holistic perspective of the student experience, combined with a learner-centred approach to data generation, has allowed us to explore a number of issues that might otherwise have been excluded. Although the main areas for investigation were agreed upon at the outset, the methodology retained enough flexibility to allow specific topics to be guided by the student voice.

Methods and methodology

A full account of the evaluation aims and methods can be found elsewhere (Aspden *et al.*, 2003). Our intention here is to provide a brief review to allow the data to be discussed in context.

Phase 1 of our evaluation took place between November 2002 and February 2003 and used a combination of interview and observation to examine the experiences of students who were enrolled on four or more Blackboard sites. We decided to focus our initial research on this group of students, as we were looking primarily for the impact that the VLE was having on the student experience. Allowing for variation in activity across the different courses, students on multiple sites would be more likely to feel the impact more acutely than those enrolled on just one or two sites, and we felt that their experiences would be a useful starting point for the evaluation. This initial phase allowed us to gain valuable insights into how the online component of their learning fitted in with the students' overall experience of being at SHU and raised some interesting – and sometimes unexpected – issues. The complexity of the picture that was emerging from this data encouraged us to look at the student experience in more depth. Our intention was to use the next phase of the evaluation to generate data that would complement the verbal and observed data that we already had and the decision was taken to design and trial a reflective learning activities diary. In this way we hoped to get an insight into the day-to-day experiences of students through written, self-report data.

Social researchers have used diaries to collect data in a range of different settings (Corti, 1993), either as a stand alone data source or as an alternative to observation (e.g. Maas and Kuypers, 1974) that can be used for preliminary data collection prior to in-depth interviews. The use of reflective diaries as a learning and teaching aid is growing and their application as a tool for educational research is reported in a variety of contexts (e.g. Nunan, 1992; Tang, 2002), some of which concentrate specifically on research into learning technologies (e.g. Breen *et al.*, 1998; Johnson, 2001; Brace-Govan and Clulow, 2000). The use of diaries for research is not without its problems, however. Bell (1999) discusses how they can be adaptable and valuable sources of information, but that they can be time-consuming to complete and that participants need to be clear about what is expected of them. The fact that they are time consuming needs careful consideration – from an ethical point of view, the input in terms of time and effort from participants needs to be weighed up against the benefits that can be accrued. Johnson (2001) noted that the quantity and quality of the data provided by participants using diaries as part of a course evaluation was not sufficient to support the students' perception that they were time consuming to complete.

Other potential drawbacks of this method include the non-completion of diaries (where participants drop out of the study part way through) and falsification of data. Deliberate falsification should be less expected in a study such as this, as the data provided is not attached to specific courses or learning outcomes/objectives – in effect, the participants are being asked for their opinions confidentially rather than being judged or assessed (although as in much research the very fact that their behaviour is of interest can cause participants to modify it). More of a concern, however, is the falsification of data which is written after the event, which negates the reason for using diaries to obtain information as close to a particular moment in time (Plummer, 1983) rather than relying on re-call. We, therefore, built in a number of stages into the design of the diary in an attempt to minimize these potential problems.

As with Phase 1, the participants were drawn from those students who were enrolled on four or more Blackboard courses. Ten self-selecting students were asked to keep the diary for a period of 2 weeks, at the end of which they took part in an in-depth, semi-structured interview. (Because we were not looking to make direct comparisons between the experiences of students, we did not ask that all 10 diaries were kept for the same

2 weeks. Instead, each student selected a 2 week period between March–May 2003.) The diary was introduced to them in an initial, individual meeting with the researcher, during which the aims and objectives of the research project were outlined to them and the students were assured that their data would remain confidential. The diary itself was structured in three separate parts, as follows:

- An activities log was provided for students to record which activities they had been involved with on a particular day and approximately how long they had spent on each activity (or, in the case of e-mails or postings to a discussion board, how many messages they had sent or received). This sheet was completed on a daily basis and the intention was to provide something to which the students could refer in the later sections of the diary rather than to measure their activities quantitatively.
- A sheet with five open-ended questions, designed to encourage students to reflect on what they had experienced during the day. The questions asked them to think about whether the different learning activities linked together, what went well, what frustrations they encountered, etc. This sheet was also completed on a daily basis.
- A sheet with three open-ended questions, designed to encourage students to reflect on the effectiveness of the week as a whole. This sheet was completed on a weekly basis (i.e. at the end of each of the 2 weeks).

A series of feedback stages were included in the schedule to encourage engagement with the process (which would hopefully encourage completion) and to minimize the risk of falsification mentioned above. After the first 2 days of keeping the diary, the students were asked to e-mail their completed sheets back to the researcher, which allowed two-way feedback to occur: any immediate problems that the students were experiencing could be picked up at this stage. The students also returned their sheets for the first week as soon as these were completed, again to allow any immediate problems with the diary to be identified and resolved. All students were also offered full support as and when they felt the need while they were working on the diary.

The proforma for the diary was made available electronically to the students. This format was felt to be preferable to a paper-based diary (which would have made the feedback stage less convenient for the participants and the data analysis more time-consuming) and also more appropriate than a web log. The use of web logs (or 'blogs') could have biased the sample towards those who had the skill and confidence to maintain a web page and could also have favoured those students with off-campus internet access (i.e. which could be used for non-study related activities). Because this phase of the research was exploratory in nature, it was thought that the introduction of these potential constraints was inappropriate, as we wanted to leave the chance for participation open to a broader section of the student population.

Because of the commitment required in this process, each student was offered payment in book vouchers (£50 value) on completion of the diary and interview. The data discussed below is drawn from the completed diaries. (Note: although 10 students were involved at the outset, one was unfortunately forced to withdraw part way through because of personal circumstances, so this partial data has been excluded from the analysis.) The sample size for this phase of the research is obviously only a small proportion of the total population and our intention was not to create a data set from which we could generalize. Instead, the research was designed to give an insight into some of the different ways that blended learning is experienced by SHU students and as part of an ongoing, formative evaluation the diaries are not an end product in themselves. Rather, the aim is to use subsequent phases to expand upon and refine ideas generated in the initial stages.

Data analysis

The analysis began by taking the individual accounts of each student on a day-by-day basis. We examined the learning activities that the students were involved with on each day and plotted them against a continuum which travelled from activities that were highly tutor-dependent (such as a lecture) to those that were carried out independently by the student (such as individual research).

The positions of these activities along the continuum were used to give a sense of the relationship between the different types of interactions. For example, a lecture is highly tutor-dependent, so would appear at one extreme of the continuum. A seminar – with opportunities for interaction between students – is also tutor-dependent, but not to the same extent, as there is more room for negotiation of the shape of the learning experience. A student meeting informally with members of their peer group would not be tutor–dependent and would appear further towards the 'independent student' end of the continuum. Using the written data provided by the students, we then looked at how the different learning activities were connected together to form the overall experience.

Interactions between students, their peers, their tutors and the other aspects of their learning experience have many different forms. And, unlike students on a fully online course, students learning in a blended environment have a physical, on-campus presence – although not all students are present on-campus for the same purposes or lengths of time, this physical interaction contributes to the connections made and how they are maintained. Also, as with all campus-based courses, interactions between peers and tutors are not restricted to formal, scheduled contact time. Students have the opportunity to interact with the various aspects of their learning experience in ad-hoc, opportunistic ways which appear to contribute substantially to a perception of connection. Two important points should be made here: first, the presence of, for example, a student's peers does not guarantee that any interaction will take place or that any interaction will be of a high quality; secondly, we are not looking to measure the effects of any interactions in terms of gains in learning outcomes. What we are instead examining are the properties of the blended environment that enable or facilitate interaction and the making of connections. It is also worth noting that, of the nine students who completed the diary/interview process, four regularly commuted considerable distances from outside the city to attend campus (three lived permanently outside Sheffield, while the fourth returned to her home city at least once a week for employment purposes). It is easy to imagine that living and working at such a distance from campus would impact significantly on these students' views of their opportunities for interaction with others and with their institution, and this will be explored later.

So, in terms of keeping connected, does an effective blend of the physical and virtual environments add anything? In this section, we look at some of the indicative findings from the diaries and consider what these could contribute to our understanding of the application of blended learning techniques. The depth of the data generated by the diaries is such that a complete presentation falls outside the scope of this paper. Therefore, the instances cited below have been chosen to represent the range of those that refer implicitly or explicitly to the perceived connections between the students and their learning experience.

'I have contact with university even though I am not there'

On-campus, students have the physical embodiment of the institution – the architecture, the setting, the people, the resources – with which they can identify and a sense of being at university is supported by recognition of this environment. In a blended environment, the presence of the institution is maintained virtually when the students are off-campus and the use of resources accessed through the VLE allows students to further engage with their studies 'outside of university time'. This distinction between university time (i.e. being on-campus) and non-university time (i.e. being away from campus) is still made, but the connection with the institution is not completely broken and, despite the physical distance, the engagement is maintained. The above quote is from a student who only attends campus when she has contact time scheduled and undertakes paid employment on the other days. Although she classes these days as her 'days off', she maintains her contact at a distance by checking for course messages, ensuring that she does not miss out on information relevant to her or her studies.

Two of the students (Student 2; Student 3) who completed the diary were in the process of undertaking course-related work placements. It could be expected that these students might lose at least some degree of contact with the institution during their placements, which took them away from the campus and situated them in a working environment. However, analysis of the activities of these students showed that they were still involved with the institution – and with the other people involved in their learning experience – on their placement days. The types of interactions that took place off-campus (and online) included interactions with peers (contacting and being contacted by other students about academic work) and interactions with online resources (such as electronic papers or information about assignments accessed through the VLE). So, the virtual presence of the institution facilitates the maintenance of connections for these students.

Maintaining this contact and, therefore, being able to engage with work, which in turn enables better preparation for face-to-face contact time, is a recurring theme throughout the diaries. Students talk about interlinking their different activities (Student 7) and furthering their studies before and after teaching sessions (Student 1), using opportunities for continuing engagement to facilitate better interaction with work during contact time.

The ability to keep up with work online does, of course, rely on students having internet access and equality of access is a matter for concern amongst tutors. An interesting theme that emerged from our earlier interviews/observations with students was that none of the students without home access felt this to be negative. It was the students who did have access via a private machine who questioned whether those without would be able to

keep up to the same degree. This suggests that – at least for our students – the perception of whether this is essential is influenced by the level of access that they have available to them. Once students have the security of knowing that they can use the internet from home whenever they want, it becomes difficult for them to imagine how they could manage without it. On the other hand, students without home access schedule their use of the online environment to coincide with their presence on-campus, allocating their time according to their circumstances.

As mentioned earlier, students in a blended environment should have means of making and maintaining connections in the physical and virtual environments. In certain cases, integration with institutional life may be maintained – and enhanced – directly through communication facilitated by the VLE. For example, a Discussion Board that allows students to engage with a difficult topic outside of class time can reduce feelings of isolation/disengagement that might be fostered in the classroom environment. A student who is feeling left behind in the physical environment may be unwilling to speak up and engage with the topic in class. However, given the time to reflect on the problem and an environment that allows for participation in debate about the problem, the student can begin to feel more confident, more engaged with the topic itself and with the class as a whole (Student 4). Access to information electronically can also help with engagement in another sense. The same student (Student 4) lives a considerable distance away from campus, so her time on-campus is limited to occasions when formal teaching sessions are scheduled. Through using various online sources of information, however, she is able to apportion her time on-campus effectively, this added degree of flexibility and planning meaning that less on-campus time is spent searching for information and allowing more time to be spent interacting with peers. This allows chance for students to talk through academic issues and to help each other with problems, but also helps to foster a sense of group cohesion, and these informal peer support networks are then sustained off-campus by other means.

These more informal activities often occur opportunistically, with students taking advantage of time in between lectures or when they 'bump into' peers on-campus. This underlies the fundamentally social nature of learning on-campus and the adaptability of face-to-face situations. Face-to-face meetings with staff are also open to this opportunistic use and students use these opportunities to work through particular issues, allowing them to engage with their individual work more effectively. For example, 'a 5 minute chat with my tutor in lecture time' (Student 8) allows a student to progress with work that she has become disillusioned with, so in this case re-engagement with academic work is facilitated by contact and interaction with members of staff. Having the opportunity to talk through issues with others assists progress and clarifies problems helping students to see how they understand issues (Student 5).

'I had started to not like that lesson as I felt I was getting left behind'

We have so far concentrated on occasions where connections are fostered and maintained. However, as mentioned briefly above, feelings of isolation do occur in on-campus environments as well as when students are at a distance, and this section looks at some examples of the barriers that prevent effective engagement. The student who made the comment above was feeling disengaged from her work during lectures, which made her feel that she was not keeping up with her peers (Student 4).

Another issue that can prevent effective engagement with work is the perceived commitment of others. For example, group members not attending meetings make continuing engagement of the others very difficult, breaking the connections between students and between students and their work (Student 1; Student 5; Student 8). The perceived attentiveness of others – staff and students alike – can also greatly affect students' sense of connection, in the online as well as on-campus environment. Throughout the diaries, students talk about their perceptions of non-attentiveness of staff, which are created through their expectations not being met. Examples of these situations are lack of response to e-mails about individual problems (Student 1), resources posted within the VLE not being kept up to date (Student 9), material covered in lectures being repeated or not relevant (Student 2) and non-communication about timetabling changes (Student 5), the impact of which is particularly acute for those students who have to commute to campus. What becomes apparent from the data is that instances where engagement is lost affect students' perceptions of the learning experience as a whole rather than just of the discrete activities. This becomes clear not only from what the students say – 'This put me in a foul mood and I found it very difficult to work' (Student 5); 'today has been a complete waste of a day' (Student 9) – but also from the way that the tone of their writing changes for the whole day. The sense of despondency with academic life in general comes across very clearly when some expected connection is broken.

Discussion

A blended approach does, in many cases, facilitate connections and engagement between students and the other aspects of their learning experience. Using the continuum mentioned earlier (tutor dependent – independent student), we were able to see that, although many of the learning activities were carried out independently by students, the discrete activities did link together to form a cohesive learning experience, which involved interactions with others, with resources and with the institution. This blend of independent work and collaboration with others is in many cases facilitated by the blend of the virtual and the physical and the additional opportunities that this presents. Students then exploit these opportunities as they create their own pathways through their learning experience, with each environment offering its own potential advantages and drawbacks. For example, interactions in the physical environment are adaptable to specific situations, but the benefits of attending campus are judged against the cost (time and money) involved in getting there. The virtual environment can be used flexibly to fit in with particular circumstances, but the expectation of constant access to resources – and people – must be met for its value to be realised and appreciated.

Obviously, the effectiveness of the blend relies on the active participation of all involved and the environment is only going to be effective if the relevant parties engage with the process. As we mentioned above, instances where contact and connection are broken have effects beyond the scope of a specific activity. Yet, the nature of the blend itself does allow for some of these broken connections to be patched. The student who feels left behind in a teaching situation is able to reflect on her learning and share ideas with a wider peer group in the online environment: where she might only have been exposed to the peers she feels comfortable with in the physical environment, the online environment facilitates access to the whole class. Conversely, the student who finds more barriers with online communication still has access to face-to-face opportunities for socialization or academic work, which feeds into the sense of a holistic learning experience.

Conclusion

So what does this contribute to our understanding of a blended learning environment? As mentioned earlier, the intention is not to generalize from our data, but we believe that the findings reported here indicate that the blend itself makes effective engagement in a range of situations possible, allowing students to fit their different activities together with more flexibility according to their particular circumstances. Where it is used appropriately, the effective blend of face-to-face and online learning opportunities provide enhanced opportunities for students to maintain their connections with their learning experience according to their particular needs. Students who – for whatever reason – are unable to attend campus are able to continue their work alone while, at the same time, sustaining contact with others and with the institution itself, which then feeds directly into how time is spent when they are on-campus. Of course, the presence of another aspect of the learning experience does not guarantee that an interaction will occur or that it will be of a high quality. However, the ways that students judge the value of their time spent in the different learning environments does suggest that they are indeed seeking out 'high touch' situations, and that a degree of flexibility is being sought in both the physical and the virtual environments. This flexibility is the key to the maintenance of effective interactions.

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Biographical notes

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