

# Supporting and Enhancing Undergraduate Learning with m-learning tools: an exploration and analysis of the potential of Mobile Phones and SMS

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## Abstract

In this paper we discuss a case study investigating how the academic and personal development of first year students on an undergraduate sports education degree can be supported and enhanced with mobile SMS communication. SMS-based technologies were introduced in response to students' particular needs (in transition to Higher Education) and characteristics ('digital natives'). Despite being unaccustomed to using their mobile phones for academic study, students willingly accepted SMS reminders from their tutor via a bulk texting service. Many students particularly valued reminders in support of their time management, an important self-regulating strategy known to be a component of successful transition. Drawing on evidence from two student surveys, focus groups and a tutor's journal, we illustrate the potential that mobile SMS communication has to extend the tutor's voice beyond face-to-face teaching sessions, when used in concert and integrated with a more traditional learning and teaching context (lectures and a Virtual Learning Environment). This approach can help reduce transactional distance across psychological and communication space in student-student and student-tutor interactions (Moore, 1997, Laurillard, 2007).

## Keywords

SMS, mobile phones, transition to HE, transactional distance, bulk texting

## Introduction

The pressures on institutions to increase student numbers and employ more teaching staff on part time contracts can make it difficult for teaching staff to keep connected with their students. The latest generation of undergraduates have grown up in a world of pervasive digital technology which, it is claimed, has caused them to develop fundamentally different ways of thinking and processing information from their predecessors and their teachers (Oblinger & Oblinger, 2005). Furthermore, widespread ownership of mobile devices have provided an infrastructure that these students rely on for building extensive social communication networks (Reid & Reid 2004) in ways unfamiliar to their tutors. Arguably these physical, cognitive and technological disconnects compound the challenge of supporting students at vulnerable points in their academic development, for example, when making the transition to the new and sometimes alien social and academic environment of Higher Education (HE).

Mobile learning (m-learning) opportunities are thought to offer alternative or complementary modes of learning that more closely match student preferences. Many pilot or demonstrator (proof of concept) m-learning projects have illuminated the potential for mobile devices to support learning and change in HE approaches (Cook et al., 2007). Typically these might involve the use of high specification devices running specialist software packages and/or focus on using mobile devices as part of highly student-centred learning experiences at remote locations rather than in traditional learning settings. Few studies have explored how to harness existing infrastructures of personal mobile devices or the protocols of social communication for study purposes. Furthermore, little is known about how mobile mediated communication might complement more traditional learning and teaching contexts (e.g. lectures, seminars and more recently and increasingly, within Virtual Learning Environments, (VLEs)).

In this paper we offer a case study that illuminates the role of mobile SMS and issues associated with embedding this communication in an academic course of study. We focus on three themes: (a) how texting in support of time management can help students in transition; (b) how SMS communication can

act as an extension of the tutor's voice and how this impacts transactional distance; and (c) how learning to text and texting to learn were reciprocal processes attended to by both tutors and students.

#### *Transition to HE modes of study*

There is now growing recognition that higher priority must be given to addressing the needs of students during their transition into HE (Kember, 2001). New students face a variety of challenges associated with HE modes of study where academic demands and teaching arrangements differ from their previous experiences in school. First year students often report differences between the degree of support they received before and the support they receive in HE where they are expected to rely more heavily on their own efforts (Teese, 2002). Placed in an academic environment in which self-direction and independence in learning are emphasised, in contrast to more didactic approaches experienced in secondary education, many students feel isolated and insecure. Bryson (1997) notes that the removal of the structures (family, rules, regulations and syllabus of a school) results in a difficult transition period for students, characterised by uncertainty. Little or no interaction or personal contact with tutors may lead to less confident students not succeeding in their first semester. The first year experience at university has been recognised as especially important because this is when the majority of student departures occur. It is also seen as key to many student experiences that lead to later success in HE. More recently, Harley et al. (2007) noted how the 'process of renegotiating social support networks, redefining existing relationships with family and friends at home, and establishing new friendships is crucial for a successful transition to university' (p.230). Other research has explored the transition experience in relation to concepts of personality, role and future employment. Kift and Nelson (2005) review institutional practices that support learners, and posit that for successful transition, HE should inculcate a sense of belonging via involvement, engagement and connectedness.

Taking responsibility for improving one's learning and becoming an independent learner is typically assumed to be a requisite for success in HE (Allan & Clarke, 2007). Biggs (2003) posits three levels of skills that are required for students to become independent learners, noting that 'generic skills' include 'ways of managing time and space' (p.93). In relation to models of learning activities, Biggs suggests that self-study, which might be guided or self-directed, is a key component, and leads to academic success (Boekaerts & Niemivirta 2000), namely, the extent to which students are motivationally and behaviourally active participants in their learning, as exemplified by effective time management, goal-orientation, mastery of learning materials, and a sense of self-efficacy.

#### *Digital 'natives' and their SMS communication practices*

Prensky's (2001) conception of the divide between digital 'natives' and 'immigrants' has alerted the world of education to the ways that students fundamentally think and process information differently from their predecessors. Arguing that the 'immigrant' teachers' assumptions of what learners should be and the methods that should work are no longer valid, Prensky suggests that in relation to methodology and content a radical rethink is required for 'all subjects', 'at all levels, using our students to guide us' (p.6). While Prensky's model has been discussed and his initial categories embellished further (Toledo, 2005), few would disagree with the basic tenet that narrowing the gap between the teacher ('immigrant' or 'tourist') and the 'native' student is a key concern as we consider the impact of technology. Moreover, in Wesch's YouTube portrayal (2007) of contemporary life as a student in the USA, the relatively impersonal experience of HE ("18% of my teachers know my name") is highlighted, while Wesch also alludes to the complex social communication network that competes for time with more academic pursuits ("I will read 8 books and 1281 facebook profiles this year").

A key question then is whether or not alternative or complementary modes of learning, such as m-learning, might better support contemporary students. Mobile phones can now be considered as pervading the UK student population with Ofcom (2007) reporting that, in 2006, 96% of the UK population in the 15-24 age group personally used a mobile phone. More provocatively, the Horizon Report (NMC, 2007) predicts that 'the capabilities of mobile phones are increasing rapidly, and the time is approaching when these little devices will be as much a part of education as a bookbag.' It is timely to investigate how these devices can be meaningfully orchestrated into HE learning experiences. However, we concur with Corbeil and Valdes-Corbeil (2006), that changes as a result of introducing m-learning are likely to be 'evolutionary rather than revolutionary', as shown in our case study.

M-learning can be defined in many ways depending on the focus on the learner, technology, or learning context. For the purposes of this study, we interpret m-learning as 'learning in a mobile society, with a

focus on how society and its institutions can accommodate and support the learning of an increasingly mobile population' (Sharples, 2007). Our interest is in how mobile phones and specifically SMS can complement and enhance traditional HE education, while at the same time, address issues of disconnection between students and their tutors at key times, such as during transition to HE.

A few studies report on the efficacy of SMS in HE. Stone et al.'s (2002) experiments reveal the effectiveness of SMS in gaining attention. They observed that 50% of a 1000 student sample had responded to an SMS within 30 minutes, the first responses arriving within 10 minutes. Other studies report on the use of SMS within teaching and learning. Nix et al. (2005) suggest that using mobile phones and SMS for academic administration had a positive impact on student drop out rate, keeping distance learning students on track and supporting 'at risk' students. Pastoral support is also the focus of Horstmanshof's (2004) work in Australia and Harley et al.'s (2007) in the UK, the latter specifically in relation to students transitioning to HE. Both studies demonstrate student willingness to accept their tutors as participants in informal SMS communication about their courses of study. Horstmanshof made her mobile number available and encouraged students to make contact, while Harley et al. took a more structured approach and planned messages to be sent out at times when they thought students would be feeling vulnerable. Harley et al. suggest that one way students support each other is by engaging in an SMS dialogue of checking with peers about what is expected of them. Also, we have found students check email and notices on a VLE relatively infrequently compared to text messages. Overall these researches are encouraging with respect to student willingness to use SMS outside a purely social context, and the positive psychological impact of using a highly personal medium.

#### *Transactional Distance*

Somewhat perversely, the widespread and increasing deployment of new technologies across HE can exacerbate the challenges faced by new undergraduates and their tutors. Noble (2002) alerts us to the dangers of HE institutions turning into 'digital diploma mills', and then reminds us that 'education is a process that necessarily entails an interpersonal (not merely interactive) relationship between people' (p.283). Guiding us in our thinking about new e/m-learning approaches, Thompson (2007) encourages us to look to research from distance learning contexts. Specifically, Moore's (1997) notion of transactional distance is pertinent, referring to the "psychological and communication space to be crossed, a space of potential misunderstanding between the inputs of the instructor and those of the learner" (p.22). While this is not uncontested (Gorsky & Caspi, 2005), it does draw attention to key variables, namely dialogue, structure, and student interaction, which Moore suggests can be manipulated in order to cross this space. *Increasing* dialogue with tutor and *increasing* student-student interaction tends to reduce transactional distance, whereas an *increase* in structure tends to increase distance. Although these ideas were developed for purely distance learning we believe that they offer useful underpinnings to designs for on-campus 'blended learning'. While Moore's conception of dialogue is non-specific, Laurillard's (2007) conversational framework also helps distinguish between the different purposes of student-tutor exchanges that could each or collectively influence transactional distance. Additionally, it concentrates attention on important aspects of the learning process and thereby guides our use of technologies such that they are directed at promoting higher quality learning.

## **Case Study**

*Context:* We focus on a first year unit entitled 'Exploring Effective Learning' in the Coach Education and Sports Development Undergraduate Programme at the University of Bath. The aims of the unit are to identify effective approaches to learning, and develop student understanding of the learning process in the context of study in HE. The unit is well-established, where teaching consists of two hours contact per week, with an expectation of students mirroring this in regular independent study. The unit attracts students from other departments, such as psychology and social sciences. Coach Education students in particular experience challenges with transition as there are extra demands on their time, due to the need to train and perform (travel to competitions, training camps, etc). Most students are resident on campus, where they have access to an extensive wireless network. Evaluations from previous cohorts indicate that the students experience difficulty in sustained engagement with independent study tasks.

- *Aims:* By structuring inter-session study time using group learning activities (JISC 2005) we aimed to establish networked opportunities for learning that more effectively support the student experience on this unit and motivate student participation. In addition we sought to harness the communication

cultures and skills of these ‘digital native’ students, using mobile phones and SMS to promote greater connectivity between the students and the tutor.

- *Preliminary Investigation:* We surveyed the new students (n=56), prior to arrival on campus to elicit data about the extent of mobile phone ownership, the capability of their devices, and the range of contracts or licences under which they operate, student cultures and skills surrounding their use, alongside the students’ willingness to adopt mobiles as tools to support their learning.
- *How available are students for mobile contact via SMS?* Students responded they were almost always available for communication via their mobiles. They reported checking for messages frequently (every 20min, 1hr, several times a day) and always responding to the arrival tone.
- *What can their mobiles do?* The majority of students own high specification mobiles. Surprisingly few seemed to use anything more than basic capability (SMS and voice calls). In terms of student views of the potential and willingness to use their mobile phones to support learning, the vast majority welcomed contact with tutors and receiving reminders about deadlines; students were willing to use some of their own texts for study purposes and to receive texts connected with a course of study; and would allow their mobile numbers to be stored securely by their department.

*Implementation:* The findings and our literature review informed the initial design of incorporating texting into a set of group learning activities to give structure to out-of-session study time while facilitating greater connectivity between the students, the unit and the tutor. The activities integrated the two dominant learning contexts for students on this unit: face-to-face sessions and the VLE. Asynchronous tools (forums and wikis) were used in concert with mobile communication, managed through a bulk texting service to support both individual and collaborative processes.

The initial survey provided us with clear guidance regarding the students’ views of acceptable use of text messaging for learning, especially volume, timing and purpose of the texts. The text messaging component of the integrated learning activities were constructed within these parameters: the messages acted as reminders to engage with preparatory and follow-up activities located in the VLE, and associated with face-to-face sessions. Students received no more than two texts a week. To achieve efficient management and distribution of the messages, a bulk texting service (Edutext) was used, enabling composition, scheduling and sending of personalised text messages via a web interface. In addition, they were requested to send one SMS message in response to a preparatory task, for example:

Hi Tom. A reminder 2 lk at & comment on the reading improvement video-Moodle (Act 4.1) Pls txt in wht u hve learned from the video b4 session. Gabriele

Hi Laura. A reminder (if needed) to text in your definition of metacognition before 2pm today. Start your text with ED. C u 2moro. Gabriele

Hi Ian, jst a reminder to think of a recent lecture & txt in what the lecturer did to help/hinder yr learning in the lecture. By 9am 2moro pls. Gabriele

Hi Joanna, A remnder 2 complete follow-up acts (5.4, 5.5) good prep for assgmnnt, (5.6) ur action plns. Lecture style videos now on Moodle. Gabriele

i have learnt how The sq3r strategy could help me 2 read aswel as actually takin in the info & learning at the same time e.g. Taking notes at same time

awarenes + understandin of 1s own 4t proceses esp regarded as havin a role in directin those processes.

The lecturer is willing to answer any questions that anyone has, and uses specific language that students will understand.

*Early Student Feedback:* In the early stages of the unit we shared our plans with the students and requested feedback via an online forum. Student participation was good (31) and comments were made about the usefulness of the texts for reminders and deadlines. The few areas of concerns were: with costs (11); restrictions of 160 characters (4), volume (3). At this point we implemented an opt out, by texting “NO Reminders” to the course mobile number. Only one student said they would take this up.

*Refining the Implementation:* During the semester we continued a week-by-week formative evaluation through informal and formal (focus group) consultation with students and our own ongoing tutor reflections (weekly diary), addressing: pedagogical considerations of the appropriateness of texting in relation to the desired learning outcomes; volume and quality of students’ texts responses to learning activities; changes in the quality of student engagement; attendance in face-to-face sessions and online; coherence of the integrated learning activities, and reliability of the bulk texting service. There were no major problems with how the texting was being received by students (e.g. frequency of texts out to students and requests for text responses) and feedback was generally confirmatory regarding the efficacy of the texting activities. As a result of student feedback in the focus group, for example, students’ text contributions were then presented by a ‘tag cloud’ to aid the extraction of meaning.

*Summary of Findings:* A comprehensive questionnaire was administered at the end of the unit (50 questions, both qualitative and quantitative). The response rate was 88% (n=81). Access statistics from the VLE and the bulk texting service and the tutor's journal also contributed to our evaluation. Overall, students highly valued the text messages as part of this unit, only two chose to opt out of receiving SMS. Predominantly they took positive actions with the texts e.g. acting on it, saving it, only 11% (n=71) chose to ignore or delete messages from the unit. The VLE and bulk texting service statistics suggested that the texts successfully and consistently guided students to the intersession learning activities. Students regarded the texts as reminders about work to be done, important deadlines, administrative changes, etc, and regarded them as an effective aid to time management (62%, n=71), especially in the busy first few weeks of term. They felt that the texts were better than email at gaining their attention and that they clarified instructions that can easily be missed at the end of face-to-face sessions. Students liked the personal nature of the texts and suggested that they would be an appropriate way for personal tutors to keep in touch. However on a few occasions, texts arrived at inconvenient or inappropriate times (and then students felt 'nagged'). Few students had strong general feelings about receiving texts and only a minority (13%, n=71) expressed negative reactions to them. They were less supportive of sending texts in as part of learning activities and found it a challenge to be concise when restricted to 160 characters. Inhibitors to making responses by text included no credit (24%, n=55) or were associated with doubts about task efficacy. In a few cases, lack of signal on campus was a problem and some students found themselves locked into poor network coverage.

Our evaluation showed that texting did prompt student responses to directions and questions from their tutor. There was a correlation between the time the text messages were sent out and students' arrival and subsequent activity in the VLE, in some cases students would visit the VLE just a few minutes after receiving their message. When asked about how well the face-to-face teaching, the VLE and the texts had worked together, 74% (n=71) thought they had worked well or very well together. Also, in response to being asked about what the texting had added to their learning on the unit, student comments were predominantly about convenience/accessibility/gaining attention (36%, n=59) or about the effects of the texts as prompting them to take action (32%, n=59).

## Discussion

We now return to our main theme, how the academic and personal development of first year students on an undergraduate degree can be supported and enhanced with m-learning, via the three foci:

### *a) texting and time management aiding transition*

Students in this study identify good time management as being an important contributor in successful transition to HE. Repeatedly during our evaluation, students connected the value of the text messaging with issues of time management. It was notable that few chose to opt out of receiving text messages, the predominant reason for not opting out being their usefulness as reminders. This is surprising, as prior to our study (initial questionnaire), students did not often use their mobile phones for receiving reminders, therefore indicating that in the academic context, SMS reminders offered sufficient utility for them to be accepted by almost all students as a new way of using their phone.

Two major features of the SMS communication are important here: the immediate gaining of attention, and the ease with which items can be saved and reviewed. When asked about how SMS had helped time management specifically, student comments focused on being prompted to do something, e.g. developing a schedule. Students distinguished between a 'prompt' and what might be considered a 'to do list', perhaps indicating different levels in time management strategies. Whether immediate action in response to texts, or planning action for later, it is noteworthy that reminders via SMS can support students in a progression from having no time management strategy at all, to starting to develop a distinct self-regulating strategy. Both the early and the later focus group discussed how they responded to the texts, and we noted different strategies appeared to emerge. For example: Student S – receiving a text while playing computer games – switches tasks; H - keep it on my phone for later; A – likes to see the whole weeks' worth of task and regards texting as disruptive of her personal organisation.

We realise that the value placed on particular aspects of the reminders may change as students become more self-regulating. In terms of the importance placed on the development of generic study skills, our study appears to have facilitated the beginnings of personal attributes fostering a successful transition. On the other hand, it might be argued that students become reliant on reminders, which in turn might inhibit self-regulating strategies, a view expressed by Horstmanshof's colleagues (2004), a concern we share to an extent. In the focus groups and online forum about the project, students discussed possible consequences of becoming dependent on text reminders, and specifically, whether or not becoming habituated to receiving reminders might mitigate against the development of more independent approaches to study. However, we saw there to be considerable benefits outweighing any negative effects at this early stage in the transition. In future, we envisage students being offered more choice in the type and frequency of receiving reminders, thereby enabling them to progress towards more sophisticated time management strategies. Finally, this might lead to students proactively setting their own reminders using the diary or scheduler functionality on their phones, a functionality which all their mobiles support. Further research into how these students (as 'digital natives') develop effective time management strategies will help to refine our use of SMS for this aspect of transition. In particular, we need to know more about how and whether students incorporate a world increasingly populated by digital alerts (driven primarily by rss technology) into their time management.

*b) SMS as an extension of the tutor's voice and the potential for reducing transactional distance*

The text messaging used in conjunction with this unit has extended the tutor's voice in at least two ways. Firstly, as an adjunct to the tutor's instructional immediacy strategies deployed in face-to-face sessions; and secondly, but more importantly, as a means of extending dialogue across contexts.

Face-to-face, calling students by name is a powerful instructional immediacy strategy. This and other manifestations of immediacy have been researched, for example, Allen et al. (2006) have linked the positive impact of teacher immediacy behaviours on student motivation. Both Horstmanshof (2004) and Harley et al. (2007) also report on the motivational value of personal text messages in conjunction with student support. The motivational dimension of the text messages could be linked to messages appearing as though they are personal to the student (e.g. Hi Kerry!). When asked about the difference between receiving text reminders from their tutor and setting their own reminders or alarms on their phones, students thought the reminders sent from the tutors were more effective as an extrinsic motivator in helping them to work. In itself, this single aspect of text messaging makes it worthwhile if students feel more in touch with their tutor and her academic learning agenda.

The dialogue between the tutor and students across face-to-face and virtual contexts, and the role of SMS in this, was of interest. Rather than seeing the VLE as space for student interaction distinct from the face-to-face sessions, we saw both as components of a single environment. The texts made explicit the links between these two contexts (and students (74%, n=71) commented that the messaging, the face-to-face sessions and the VLE had together formed a coherent experience). Issues raised in face-to-face sessions were developed via group learning activities in the VLE, and outcomes from exploratory activities in the VLE were continued face-to-face. An important pedagogical consideration was that the results of the students' texts should be used regularly, thus attributing value to students' contributions.

Arguably, this extended learning environment afforded the tutor more opportunities to observe student thinking and thereby more opportunities to diagnose and respond to student misconceptions. The tutor noted in her journal occasions when observations in the VLE triggered reflection on students' current understandings, which lead to a refining of ongoing dialogue with the students. In addition, the tutor noted that collections of student texts presented in the face-to-face session resulted in a higher level of engagement compared to prior cohorts. Overall, reaching beyond the face-to-face session, the tutor's voice, carried in small SMS communications, was instrumental in driving the learning process. Laurillard's (2007) framework can be used as an analytical tool here for determining what technology brings to the learning process, by asking, "how much of the framework does the technology support?" In our case it helped pinpoint the role of SMS in the learning process we constructed for students. For Laurillard, each of the activities in the conversational framework plays its part in motivating other activities, creating a continual iterative flow: "good learners may take themselves around these iterative loops...but poor learners need the teacher to construct their learning environment in such a way that they can scarcely avoid being active learners" (p.162). In our context, we take 'good' to mean 'more experienced' learners, and 'poor' to mean 'new' learners or those 'in transition'. The SMS texts were providing additional value

as personal directives to students during out of session study time, thus enabling the cycle of activities around the conversational framework to be maintained. Hence, although this study included no direct measures of the reduction (or otherwise) of Moore's (1997) transactional distance, it is our contention that by manipulating the characteristics of, and increasing the opportunity for, tutor-student dialogue, our approach in the unit exemplifies a reduction in transactional distance.

*c) learning to text and texting to learn as reciprocal processes for students and tutors*

The tutor had to learn new ways of communicating with her students, but the students also had to learn new ways of applying their socially acquired communication practices to academic contexts. From the tutor's perspective, the bulk texting software provides a vehicle into the 'digital native' SMS world of communication. An easy to use email-like interface enabled composition, scheduling and distribution of thousands of text messages without even the need of a mobile phone. However, the broadcast nature of the bulk texting service did not align particularly well with the highly personal one-to-one social texting practices commonly used by students. This was evident in a few negative comments from students when they received messages that were redundant or at inappropriate times. Judicious use of this powerful tool is necessary to avoid intrusiveness in the student SMS communication networks.

Although managing and manipulating large numbers of texts was unproblematic for staff, there still remained challenges associated with choosing appropriate purposes for SMS, composing meaningful 160 character messages and mastering texting language. Occasionally students commented that sometimes our SMS communication did not appear natural or that it was difficult to read, for example when we used unconventional abbreviations like 'yr' instead of 'ur' to denote 'your' or when we created our own abbreviations describing learning activities. The bulk texting service had enabled participation in SMS communication but it had not helped us to speak 'digital native' SMS.

Despite affording them greater mobility for their study tasks, students saw texting back comments in response to learning activities as more problematic than receiving text reminders. Some commented that they had difficulty composing text responses owing to the need for a more academic vocabulary, requiring new short cuts and predictive text. In contrast, the tutor regarded the texts received from students as a valuable way of surveying opinion and engaging the students prior to a face-to-face session. In particular, the review of collections of text responses produced a high level of engagement.

We might conclude that requests to send texts in response to a learning task were not well aligned with students' social texting practices. Typically some thought/research was required before a response could be made and it was a day or two until the next face-to-face session, where feedback would be given, thus making the exchange rather less responsive than in a social texting context. Working with students to develop texting appropriate to an academic context has caused us to question assumptions about the so-called digital native skills claimed to be ubiquitous in the student population. We were surprised that many students did not know how to use much of the functionality on their phones. Indeed Livingston and Bober (2004) also question commonly held assumptions about digital 'natives' in their findings from a survey of young people's mastery of the internet. Our students commented on the difficulties they had in reading and making sense of SMS texts containing large numbers of abbreviated words (described by them as 'gangsta txts') even when a peer authored them. Skills largely acquired to meet social purposes may not be easily transferred to others such as academic study.

This aspect of our study exemplifies a wider issue where institutions are making more e/m-learning tools available to staff, presenting not only challenges of mastering the software/hardware/service but most crucially those of meaningfully integrating the tools into a course of study. Essential to gaining a better understanding of appropriate uses of these tools is a comprehensive appreciation of the students' perspective and an awareness of how academic uses might merge with existing social practices.

## **Conclusion**

The advent of digital mobile technologies and a growing interest in their deployment for m-learning has enabled us to think differently about learning, not solely taking place in the fixed locations of lecture theatres and seminars rooms but as pervading HE. The need to manage out of session study time and

effectively engage in academic work while distant from a tutor is challenging for students in transition to HE modes of learning. The support structure provided by the text based communication and the VLE was successful in addressing these challenges by scaffolding a time management regime that fostered greater awareness of students' need to develop self-regulating strategies.

The extensive functionality of today's highly flexible personal mobile communication devices can be seductive, causing us to lose sight of the task in hand: that of providing effective learning experiences for our students. Here, the usefulness of the Laurillard model and Moore's theory came to the fore in keeping us grounded in the learning process and students' lifeworlds rather than the technology. In our study the simple text message played a small but key role in driving the learning process forward, thus providing a bridge across the conceptual spaces existing between student and tutor, and reducing transactional distance. Crucially important to our study has been the ongoing negotiation of mutually appropriate modes of texting associated with the students' academic course of study, and the willingness of the tutor to become involved in the digital 'native' world of SMS communication.

## References

- Allan, J. & Clarke, K. (2007). Nurturing Supportive Learning Environments in Higher Education Through the Teaching of Study Skills: To Embed or Not to Embed? *International Journal of Teaching and Learning in Higher Education*, 19(1), 64-76.
- Allen, M., et al. (2006). The role of teacher immediacy as a motivational factor in student learning: Using meta-analysis to test a causal model. *Communication Education*, 55(1), 21-31.
- Biggs, J. (2003). *Teaching for Quality Learning at University*. Maidenhead: SRHE.
- Boekaerts, M. & Niemivirta, M. (2000). Self-regulated learning: Finding a balance between learning goals and ego-protective goals. In M. Boekaerts et al. (Eds), *Handbook of self-regulation*. (pp 417-450). San Diego: Academic Press.
- Bryson, J. R. (1997). Breaking Through the A Level Effect: a first-year tutorial in student self-reflection. *Journal of Geography in Higher Education*, 21(2), 163-169.
- Cook, J. et al. (2007). Generating learning contexts with mobile devices. In N. Pachler (Ed) *Mobile Learning: towards a research agenda*. (pp 55-73). London: WLE Centre IoE.
- Corbeil, J.R. & Valdes-Corbeil, M.E. (2007) Are you ready for mobile learning? <http://www.educause.edu/ir/library/pdf/EQM0726.pdf> [viewed 12 Dec 2007].
- Gorsky, P. & Caspi, A. (2005). A Critical Analysis of Transactional Distance Theory. *The Quarterly Review of Distance Education*, 6(1), 1-11.
- Harley, D. et al. (2007). Using texting to support students' transition to university. *Innovations in Education and Teaching International*, 44(3), 229-241.
- Horstmanshof, L. (2004). Using SMS as a way of providing connection and community for first year students. In R. Atkinson, et al. (Eds), *Beyond the comfort zone: Proceedings of the 21<sup>st</sup> ASCILITE Conference*. (pp. 423-427). Perth: 5-8 December.
- JISC (2005) *Innovative Practice with E-learning*. Bristol: HEFCE.
- Kember, D. (2001). Beliefs about knowledge and the process of teaching and learning as a factor in adjusting to study in higher education. *Studies in Higher Education*, 26, 205-221.
- Kift, S. & Nelson, K. (2005). Beyond curriculum reform: Embedding the transition experience. *HERDSA 2005 Conference proceedings*, University of Sydney, Sydney, July.
- Laurillard, D. (2007). Pedagogical forms for mobile learning: framing research questions. In N. Pachler (Ed), *Mobile Learning: towards a research agenda*. (pp 153-175). London: WLE Centre IoE.
- Livingston, S. & Bober, M. (2004). Taking up online opportunities? Children's use of the internet for education, communication and participation. *E-Learning*, 1(3), 395-419.
- Moore, M. (1997). Theory of transactional distance. In D. Keegan (Ed), *Theoretical Principles of Distance Education*. (pp 22-38). Oxon: Routledge.
- Nix, J., Russell, J. & Keegan, D. (2007). Mobile learning/SMS academic administration kit. Paper Presented at the *EDEN Take Learning Mobile* conference, IADT, Dublin, September.
- Noble, D. (2002). Rehearsal for the Revolution. In K. Robbins & F. Webster (Eds), *The Virtual University?* (pp 282-300). New York: OUP.
- The New Media Consortium (2007). *The Horizon Report: 2007 Edition*. Stanford, CA.
- Oblinger, D. & Oblinger, J. (Eds) (2005). *Educating the Net Generation*. Educause. <http://www.educause.edu/books/educatingthenetgen/5989> [viewed 20 Jan 2008].
- Ofcom (2007). *The Consumer Experience Research Report*.



- <http://www.ofcom.org.uk/research/tce/ce07/research07.pdf> [viewed 18 Jan 2008].
- Prensky, M. (2001). Digital Natives, Digital Immigrants. *On the Horizon*. NCB UP, 9(5), October.
- Reid, D. J. & Reid, F.J.M. (2005). Textmates and text circles: Insights into the social ecology of SMS text messaging. In A. Lasen & L.Hamill (Eds), *Mobile World*. (pp. 105-118) Springer: London.
- Sharples, M. (2007). Learning for the mobile age. In C. Haythornthwaite & R. Andrews (Eds), *The Sage Handbook of E-learning Research*. (pp 221-247). London: Sage.
- Stone, A., Biggs, J. & Smith C. (2002). SMS and Interactivity and its implications on effective uses of mobile technologies in education. *Proceedings of the IEEE International Workshop on Wireless and Mobile Technologies in Education*.
- Teese, R. (2002). Bridging the gaps between secondary and tertiary education. Paper presented at the *Mind the Gap* Conference. University of Melbourne, 23 September.
- Thompson, M. (2007). From Distance Education to E-learning. In C. Haythornthwaite & R. Andrews (Eds), *The Sage Handbook of E-learning Research*. (pp 159-178). London: Sage.
- Toledo, C. (2007). Digital culture: immigrants and tourists responding to the natives' drumbeat. *International Journal of Teaching and Learning in Higher Education*, 19(1), 84-92.
- Wesch, M. (2007). *A Vision of Students Today*. <http://mediatedcultures.net/ksudigg/?p=122> [viewed 15 Jan 2008].