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**Maintaining connectivity and enhancing communication through the use of text messaging in an undergraduate nursing programme.**

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***Abstract:***

The purpose of this paper is to present the findings of a study that examined the use of a Short Message Service (SMS) (or 'Text Messaging') to enhance communication and participation with students on an undergraduate nursing programme. The ideology behind the study is based on an awareness that technology is not always recognised by nursing students as a useful aspect of their education and practice. Therefore it was considered that integrating this ubiquitous form of technology use might help them to recognise the usefulness of technology as an aid to enhance and develop more effective ways of learning and working.

Short Message Service (SMS) is a communications protocol allowing the interchange of short text messages between mobile phones. It is the most widely available data application on the planet with over 2.4 billion users (Wikipedia 2008). The advantages in using SMS messaging include 'always-on' communication, connectivity to real world learning contexts, 'top of mind' direct access and 'just for me' personal communication (Jones & Bunting 2008). The widespread availability of mobile phones provides an opportunity to establish and maintain a sense of connectedness in helping learners to engage with their programme of study as almost everyone can participate in synchronous and asynchronous communication. Laurillard (2008) suggests that we should 'harness technology to meet the needs of education rather than simply search for problems to which technology is the solution'. This concept has particular relevance for the learners in this study who undertake clinical learning experiences throughout their programme of study that are geographically dispersed over a large area for periods of time ranging from two to eight weeks. Text messaging was used to develop and maintain strong links between the tutor/programme director and the students throughout the duration of the programme.

***Keywords:*** SMS/Text Messaging, participation, communication, learning, nursing

## ***Introduction***

Good communication is a fundamental factor in all aspects of higher education and is particularly emphasized within nursing education. Student nurses are expected to develop their ability to interact competently with patients, families, team colleagues and the wider public. In addition there is a need to develop students' independent learning skills that often involves activities outside of the traditional classroom setting whilst also adhering to the requirements of the professional nursing body (An Bord Altranais, 2005 ) to maintain attendance records to ensure compliance with registration requirements for the professional nursing register. In recent times, technology has greatly influenced the way we do things in our everyday working and personal lives. One of the most prominent technological communication tools is probably the mobile phone which is ubiquitously available and increasingly acknowledged as an indispensable technological innovation that has multiple usages, including the sending and receiving of SMS text messages. SMS is a low-threshold application used widely by students (and others) to quickly send concise, text-based messages at any time (Markett et al., 2006). In this study it was used support students through the maintenance of increased communication links with the course tutor during their first experience of undertaking a self directed learning activity, the Learning Contract. The ability to transmit targeted and concise messages allows for interactivity on a scale that has infinite possibilities in both personal and professional contexts. It was considered that using text messaging would help to increase interactivity between students and tutor thus enhancing communication and facilitating greater understanding of the process and content of a learning contract that the students were dealing with for the first time.

Interactivity can be described as a complete message loop originating from the student and returning to the student. The reciprocating participant can be instructor or fellow student(s) and the loop occurs irrespective of the technology or medium of communication (Markett et al., 2006). Increased student interaction can directly lead to a more active learning environment; the building of a learning environment depends of both a wide catchment of student involvement and individual in-depth involvement. Effective interactivity facilitates the promotion of more active learning environments, the building of learning communities, the provision of greater feedback for lecturers, and it also contributes towards student motivation (Anderson, 2002; Markett et al., 2006; Muirhead & Juwah, 2003; Prammanee, 2003).

Increased student interaction can directly lead to a more active learning environment; the building of a learning environment depends of both a wide catchment of student involvement and individual in-depth involvement, text messaging has the potential to facilitate this dispersed and in-depth interactivity.

In the context of instigating a new independent learning strategy, the Learning Contract, it was important to seek ways of maintaining for students the ability to interact with their tutor and with each other as this is an essential aspect of an effective teaching and learning strategy. SMS/text messaging was integrated into the Learning Contract process as a means of enhancing the communication loop and facilitating support at a distance through increased interactivity when students were working independently in dispersed locations.

Results of this small scale study indicate that students appreciated the increased levels interactivity throughout the duration of the course. At the end of the implementation period students were generally positive about the use of SMS messaging, both as a means of maintaining the ability to interact with peers and tutor and as a support mechanism, by having easy access to cohort peers and academic support when engaging with a new form of independent/self-directed learning.

From the tutors' perspective, the use of text messaging provided a quick and efficient means of contacting students individually and as a group to provide support, answer questions and generally share a variety of information, both practical/administrative and informative/academic.

### ***Background***

SMS is an electronic communications protocol allowing the interchange of short text messages between mobile phones. It is the 'most widely used data application on the planet with over 2.4 billion users, 74% of who use text messaging' (Wikipedia, 2008). The advantages in using SMS messaging include 'always-on' communication, connectivity to real world learning contexts, 'top of mind' direct access and 'just for me' personal communication (Jones & Bunting 2008).

Mobile phones are one of the most successful technologies of the past two decades with 91% of ownership among Irish youth reported by Hegarty (2004) and ownership by students in one UK University reported at 97% (Brett, 2008). Considering the ubiquity of mobile phone usage within the general population it may be argued that the findings in these studies are representative of students across the majority of universities today, in Ireland and internationally.

Laurillard (2008) suggests that we should 'harness technology to meet the needs of education rather than simply search for problems to which technology is the solution'. This concept has particular relevance for nursing students who are geographically dispersed when undertaking clinical placement experiences. Mobile phones provide an opportunity to establish and maintain a sense of connectedness through text messaging to help learners to engage with their programme of study as almost everyone can participate in synchronous and asynchronous communication. Whilst on placement, access to more traditional group communication methods such as e-mail is restricted often resulting in piecemeal communication through time consuming cycles of telephone calls and messages left with third parties that there is no guarantee are delivered to the students.

We need to look at what types of technology are available and easily accessible to facilitate greater integration of appropriate technologies that will help nursing students to recognise the usefulness of technology in helping them to work more efficiently and effectively both as students and eventually within their professional lives. It is therefore considered timely to explore the role of SMS in the enhancement of teaching and learning practices within nursing education

### ***Methodology***

A key design feature of this study was the use of ICT to support students in understanding the potential usefulness in this interactive technology (SMS) that is so easily accessible through the mobile phone. An exploratory case study approach was used within a constructivist learning paradigm in which the students were engaged in the creation of new understandings whilst undertaking the Learning Contract (Richardson, 1997, p3). A purposeful sample of all third year undergraduate students ( $n=17$ ) undertaking the BSc Nursing (Psychiatric) programme was invited to participate in the study.

This was the first time that the students had engaged in independent/self-directed study on such a large scale and they were quite anxious that they would not know 'what to do'. At the outset it was apparent that there was significant anxiety relating to engaging in this new form of learning. It was decided, therefore to use the opportunity to explore the usefulness of SMS messaging as an aide to communication that can allay their anxieties and enhance their learning and potentially inform future professional practices. It was considered that SMS messaging had the potential to provide a scaffold as described by McLoughlin and Marshall (2000) in supporting the students both in the learning process and in developing their independent learning skills while at the same time educating the students in the integration of technology into everyday nursing activities.

In recognition of the possibility that students might feel pressured into participating in the study, as they were being asked to participate by the course tutor, an alternative was offered in which students could opt to send and receive messages via email if they wished or maintain the traditional communication methods of phone calls or emails as had hitherto been used. All participants were offered the opportunity to opt out of the study at any time and it was agreed that any students who did not wish to take part would receive the same messages via e-mail. However, all students agreed to participate in the study and were keen to explore new ways of learning and support.

On completion of the study students were invited to participate in focus groups to discuss their experiences of using SMS and to determine its potential usefulness in further studies and larger scale situations. The findings indicate that overall, students were positive about the use of SMS and were keen to integrate its use into other areas of the undergraduate programme. Some of the benefits and challenges in using SMS messaging were highlighted and some information was obtained for future research into the pedagogical underpinnings relating to the implementation of this form of mobile technology within teaching and learning practices in nursing education.

## ***Results***

It is recognised that there are limitations to the generalisability of results in this study as this was a small sample of students but it is hoped that the results will inform the development of a larger scale study in the near future.

All students in the cohort ( $n=17$ ) agreed to be involved in the study and upon completion students were invited to participate in two focus groups. A number of open questions relating to general experience; communication; cost implication; participation and drawbacks were asked to elicit the students' experience and opinions on the use of SMS as a form of communication and support when undertaking independent learning activities for the Learning Contract.

### *General Experience:*

When asked about their experiences of using SMS text messaging all students indicated that they felt it was a positive experience with statements such as; *'It was good, I can't get the internet at home so it was handy'...* *'Text messages was handier than having to go into Blackboard'* and *'It's easy, you don't have to turn on the computer, turn on the internet, go into Blackboard, to find it. And if you are away from home you have your phone with you anyway.'*

### *Communication*

As a communication tool, students felt that text messaging was more efficient than the Blackboard Learning Management System or e-Mail as everyone has a mobile phone that is constantly available and easily accessible to the student. Additionally, with the lack of availability and scant reliability of internet access in the west of Ireland, it was generally felt that text messaging was a better way of reliably getting a message out to all students.

As one student put it: *'Honestly the text messaging was far better than before, I'll be honest now I don't check Blackboard every day. I check my mails/my e-mails alright. But Blackboard is too much of an effort'* another said *'If we get a text saying there is something on Blackboard, yes we check it then'* another commented *'Whereas Blackboard now, it's kinda touch and go whether you will go into Blackboard'*. When asked if there were other ways in which SMS could be used replies indicated that it would help to avoid confusion around changes to timetables with comments such as *'..should have been used sooner...from first year, because there's been no mess ups now since we started in third year, plenty of mess ups in first and second year but none this year!!'* and *'I remember coming in and there was no class, in first and second year, especially to the Psychs, we would come in and there would be something cancelled'*.

One student summed it up by saying *'Personally I found it all positive because its' instantaneous and it cleared up any confusion about anything, yeah. Straight away you get the message and you know then, yeah'*.

In relation to directly communicating with each other, students generally just used text messaging to arrange meetings, check practical aspects of the course such as meeting times, hand in times etc statements such as *'Yes you would use texting like. I wouldn't go e-mailing everyone!!! I'd use texting not e-mailing to know when something is due in'*.

Although this information was readily available on Blackboard and on hand outs previously given to the students the need to check and re-check was evident. This may have been a symptom of anxiety as they were engaging in a more independent/self directed learning strategy than previously experienced. They appreciated having the ability to check with each other (and also the course tutor at times). The ease of use and potential for an instant/quick response obviously prompted students to check with a colleague or the tutor. In this way it is felt that students were learning to think about using text messaging as a means of seeking answers to questions and hopefully they will continue to use it in other areas of their course as they progress. Although it is acknowledged that dependence on others for a quick reply rather than seeking information for themselves is not always desirable especially when we are encouraging these students to develop as autonomous, self-directed learners who have the capability to seek and find relevant information from reliable sources when required.

### *Cost Implications*

Most students were not aware of the cost implications and had not considered how much it had cost them to send messages for the purpose of the study but the general consensus was that it had not cost them very much. In this study, cost to the student was not a significant issue as most of the messages were sent by the tutor who had a mobile phone package that included free text messages to all networks and students were not required to reply on a regular basis. Comments such as: *'I never actually queried the cost of it, 'cos the message is usually clear and concise, it's the odd time you might text back if you had a question. It just costs us like ten cent if you don't have free messaging, but most people do'*; *'never even crossed my mind'* and *'Never thought about that either'* indicated that students mostly received messages from the tutor and did not feel that they were incurring an unacceptable charges themselves.

### *Participation*

A useful aspect of the study was the ability to maintain a record of participation in self-directed work that students were engaged with, thus fulfilling a requirement of the professional body (An Bord Altranais, 2005). If students missed two scheduled tutor sessions a simple text message to prompt from the tutor to remind them of the implications of non-attendance (i.e. potentially not eligible to be entered on to the professional register) was effective in obtaining either an apology or a reason for not attending followed by attendance at subsequent sessions. When asked how they felt about being 'chased up' in this way, students generally accepted that it was useful in keeping them on track. Comments included: *'you'd become more conscious of your attendance after it, you would think 'she is sending me a message because I didn't attend class when I should have, so I'll make it my business to make an effort from now on''* and *'It would yeah, it makes you aware if you were missing one or two you would become more conscious of it, watching your attendance'; 'you'd think 'oh it was noticed so I'd better go in tomorrow'*

### *Drawbacks to using SMS*

Suggested negatives were more difficult to elicit as the students were generally very positive about the whole experience but after some consideration they volunteered comments such as: *'Yeah I suppose on a negative you couldn't get the information that you could on to an e-mail but just to inform you that there is an e-mail is just so handy' and 'it's only short so there are times when you have to send an e-mail and 'it's the one thing you can be guaranteed that everyone has a phone, everyone is going to read the text message'*

### *Discussion*

Mobile phones are one of the most successful technologies of the past two decades studies suggesting ownership rates ranging from 95% among Finnish students (Divitini et al, 2002) to 91% among Irish youth (Hegarty, 2004). There is considerable potential to integrate this type of ICT within an education setting, as it requires minimal technical and financial support: the majority of students possess the needed hardware and software (Divitini et al, 2002) and communication occurs via existing mobile networks, which are maintained independently by mobile service providers.

Nurses and nurse educators need to embrace this technology and capitalize on its ubiquity to enhance teaching and learning practices within nursing education and subsequently within nursing practice where appropriate.

### ***Limitations***

While the overall implementation of the study produced positive results, limitations were also identified. Although 100% of student participants had mobile phones some of the older/mature entry students were initially not comfortable in using text messaging as they perceived it to be a significant departure from the type of teaching practices that they expected in higher education. More traditional methods of education ie the teacher in the classroom delivering a lecture/seminar, being their preferred option. Consideration needs to be given to call credit and the costs incurred by the student to send text messages. In a study by Markett et al (2006) it is suggested that costs were a significant influencing factor in determining student participation in using SMS as the majority of students in that study were using pre-pay mobile phones. However in this study, many students had free text allowances that they were able to use therefore eliminating the possibility of cost implications for the student. Markett et al (2006) suggest that providing a free SMS number for students to send texts would entirely eliminate the cost factor for students and this may be a consideration for further larger scale studies in the future.

A further limitation centered on the amount of time spent in the initial phase of the study trying to establish which would be the best type of mobile phone subscription tariff. There was a lack of information by high street vendors and mobile phone company on-line information services. Whilst there was some literature available to draw on the experiences of others in the US and UK, this did not help with tariff information in the Irish contexts due to the variations in available tariffs from one country to another. Eventually a pre-pay tariff that allowed free SMS messages to be sent to all networks was chosen as this appeared to provide the cheapest option. However it was subsequently discovered that monthly contract tariff was needed to avail of the opportunity to integrate SMS messaging with Microsoft Outlook which was a desired aspect as this would allow for greater ease of use for the tutor and also facilitate better record keeping processes. Therefore this resulted in limitations to the way in which the project was eventually carried out.

It was originally planned to integrate the SMS service into Microsoft Outlook thereby facilitating greater ease of use for the lecturer through the ability to amalgamate student questions and responses. In addition it was hoped to create an integrated record of student participation in the Learning Contract activities to fulfill requirements of the Nursing Board (An Bord Altranais 2006) to record student attendance. Whilst records were maintained, the eventual system was less user-friendly and more time consuming as text messages and records of activity had to be transferred to a spreadsheet manually.

### ***Conclusions***

SMS has been called the 'killer' application of mobile phones, as its usage exceeded all expectations. Reasons contributing to this growth include low cost, asynchronous nature (users can reflect before sending and reply at their leisure) and potential for private/quiet use (Mitchell, Heppel & Kadirie, 2002). Studies among student populations report that up to 80% of students send and receive text messages every day (Diviniti et al 2002). Currently mobile phones are commonly perceived as a disruptive influence in the classroom and the challenges posed in trying to eradicate that challenge by banning its use and requiring students to turn off their phones are increasingly becoming a futile exercise. We need to embrace the opportunity that the mobile phone offers as a tool to improve and enhance our educational practices rather than spending valuable time trying to eradicate it.

Markett et al (2006) refer to a number of researchers have indicated that SMS is an area for further exploration in education, suggesting possible areas of investigation such as: in-class discussions (Bollen, Eimler & Hope, 2004) two-way service interactions and study support (Thornton & Houser, 2004) and learning support (Mitchell & Doherty, 2003).

Much of the work done in relation to the integration of SMS in educational delivery has been predominantly carried out with students who are studying technology related programmes (Markett et al (2006); Muirhead, & Juwah, (2003). There is a need to expand this area of study to include other students. It is understandable that nurses do not come into their profession with an expectation that they will be using technology such as text messaging as a form of communication.

The emphasis in nursing has always been and continues to be focused on face-to-face communication interaction with patients/clients and the public, colleagues and the wider public. However, in an increasingly technology oriented healthcare environment coupled with increased pressures to develop smarter working practices alongside the diverse nature of working environments within which nurses need to carry out their duties. There is a need to raise awareness among nurses of the potential usefulness of the new technologies available to them that can help in a diverse range of activities towards better working practices that ultimately will benefit patient care.

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