

Helping Distance Learners Stay Connected: The Effectiveness of Mobile Learning via SMS at Open University Malaysia

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Abstract

Distance learners often face what is known as transactional distances in terms of geographical, time, psychological and communication spaces (Moore, 1997). More often than not, compared to full time students, these adult learners who mostly hold full time jobs and have family commitments face a daunting task when it comes to juggling between studies, work and family. They often struggle to find that extra time and space to fit in their studies and frequently need to exert extra effort to ensure that they remain connected to the university, their tutors and their peers. This paper describes Open University Malaysia's efforts in actively supporting learners in their studies through the use of text messaging technology, the simplest and most widely used of all mobile technology applications available. Further, it illustrates how mobile technology enhances the blended approach to instruction and lends more flexibility and ubiquity to the learning process. It also examines the effectiveness of the initiative in terms of helping learners to (1) review/locate/remember course facts easily, (2) discuss online, (3) manage their learning, (4) persevere in their studies, and (5) remember important dates and actions to be taken related to the course. Both quantitative and qualitative data are presented.

1. Introduction

Distance education has evolved tremendously since its inception way back in the mid-nineteenth century. What started off as print-based correspondence courses that offered educational opportunities to students who were unable or did not want to attend regular face-to-face classes has now developed into increasingly more interactive distance learning programmes using newer technologies.

The why and how of helping to sustain distance learners

The term 'distance' in distance learning not only suggests that learners are removed in time and geographical space; what is of greater concern to distance education providers is the psychological and communication spaces that develop as a result of the former. Moore (1997) termed those as transactional distances, a potentially significant contributor to learner attrition. Meanwhile, although there have been claims that the blended learning approach, which combines the face-to-face mode of learning and online learning, is able to increase retention rates (Melton, Graf & Chopak-Foss, 2009), much more needs to be done to help sustain learners in their studies. The blended approach appears to bring both advantages and disadvantages to learners. While it offers greater flexibility to learners in that there is a lesser need to be physically present at classes, it also decreases the level of connection between the university, tutors and learners as compared to traditional modes of higher education. Learners are likely to experience feelings of isolation and alienation through lack of interaction and communication with fellow learners, tutors and the university (Hara & Kling, 2001; Flowers, 2001; Zirkle, 2002; Dzakiria, 2005). In the Malaysian distance education context, Dzakiria (2005) very candidly pointed out that "the notion that the teacher is always there, but isn't ... is a significant reality" (p.2). Very often, what effectively started off as a dream, a hope, perhaps with some inspiration and relatively high levels of motivation, slowly erodes as the harsh realities of juggling work, studies and family slowly but surely eat into the learners' perseverance and commitment to finishing their studies. The lack of communication and interaction between learners and faculty has been identified as one of the major factors that contribute to withdrawal from courses among distance learners (Thompson, 1997; Galusha, 1998; Murray, 2001). A study by Dzakiria (2005) found that infrequent interactions gave rise to frustrations and could impede learning. This finding paralleled that of Simpson (2002).

It is in all probability fair to say that not all distance learners are naturally self-directed and able to self-manage their learning. More often than not, compared to full time students, these adult learners who mostly hold full time jobs and have family commitments face a daunting task when it comes to juggling

between studies, work and family. They often struggle to find that extra time and space to fit in their studies and frequently need to exert extra effort to ensure that they remain connected to the university, their tutors and their peers. As such, efforts in continuously bridging transactional distances and helping sustain students in the learning process are crucial in creating successful learning environments for distance learners. Crawford (2008) emphasized that social and psychological engagement, self-regulation, chunking of information and cognitive load “directly impact the success of the learner within the learning situation” (p.1). While it may not be possible for distance education institutions to address barriers that are beyond institutional control such as situational barriers, offering adequate support in terms of helping keep learners motivated, focused and connected to tutors, online forums and the university itself could very much ameliorate conditions. Tyler-Smith (2006) noted that isolation could be reduced significantly by actively supporting, encouraging and cajoling learners and that “greater levels of persistence and completions may be achieved if learners are supported to anticipate, prepare for, recognize and recover from the cognitive burden they may experience as first e-learners” (p. 9).

The Immense Potential of Mobile Technology Innovations

In Malaysia, the penetration rate of mobile phones has been growing steadily for the past ten years; from 21.8 per 100 people in the year 2000 to 106.2 per 100 people in 2009 (MCMC, 2010). Compared to 115.3 per 100 inhabitants recorded in 2009 for developed countries, 57.9 for developing countries and 68.2 for the world (ITU, 2010), Malaysia appears to be much in step with first world countries in terms of mobile telephony. In tandem with the steady growth of mobile phone subscribers, the popularity and usage of text messaging (also known as Short Messaging Service or SMS) worldwide, has been recorded to have exceeded initial expectations. It has been noted as the simplest of all mobile phone applications, the most useful and most used (Markett, Sanchez, Weber and Tangney, 2006).

The issue of access is a crucial point to consider for an innovation to be successful in terms of adoption by the targeted users, this is particularly so for those related to the use of new information and communications technologies for educational purposes. Taking an innovation to scale, that is, promoting the widespread use of an innovation and taking it past the piloting stage to a systemic change requires the innovation to be sustainable in terms of costs, efforts and resources. User acceptance and ease of access are also important factors to be considered when making decisions on which of the many applications that may be available, to develop and use. Related to this, Viteli (2000) as cited in Caudill (2007) underscored the fact that “The first demand for a successful application of m-Learning is one of scale; without a saturation of the technology in the target audience the system will fail (p.5)”.

Taking all the above points into consideration, Open University Malaysia embarked on mobile learning using SMS initiative in 2009 in an effort to make learning more flexible and ubiquitous for her distance learners. Text messaging was chosen over other more sophisticated applications like MMS, podcasts, and simulations on mobile phones as it was deemed to be the lowest common denominator of all mobile technologies; it can be used in all types of mobile phones and is one of the simplest and most user-friendly applications where the masses are very much familiar with receiving and sending SMSes.

The Use of Text Messaging to Support Distance Learners

Literature records varied uses of text messaging by higher education providers to support distance learners as well as the different benefits they bring. These may be viewed in five dimensions: administrative support, academic support, learner motivation, learner self-management, and co-ordination of learning activities.

The use of SMS by the University of Pretoria, South Africa for administrative purposes such as such as reminding learners of contact session dates and registration deadline was found to be immensely successful in reducing “perceptual distance between learners and the university” and in reducing the drop-out rate of at-risk learners (Ericsson Global, n.d.). Similarly, the University of Ulster was able to reduce learner drop-out by sending timely SMS to learners who had not been attending classes and largely had the misperception that nobody cared (Keegan, Kismihok, Mileva & Rekkedal, 2009).

According to Keegan et al. (2009), the use of SMS messaging for tutoring is well-established as a form of academic support that is successful in enabling students to focus on the academic content, to come better prepared for tutorials and to be more ready to participate actively in discussions. When learners receive SMSes ahead of their tutorials, there is an “expansion of time” in that students have more time to reflect and react to the information they receive. A study by the Sheffield Halam University of India found that when SMSes containing important course content are received by learners, they are more readily and easily assimilated because they are chunked in small sizes (Uday Bhaskar & Govindarajulu, 2008). This may be likened to the ease of downloading digital files which are smaller in size as compared to those that are large. In addition, content sent via text messages and stored in mobile phones also enable learners to access them whenever and wherever they want to. This particular aspect lends to the ubiquity and flexibility of learning which is of paramount importance to mature learners who have to find time to study. Hayes, Joyce & Pathak (2004) were of the opinion that mobile learning affords students opportunities to make use of “dead time” or non-productive time such as when one is travelling on the bus or while waiting in queue to review course materials.

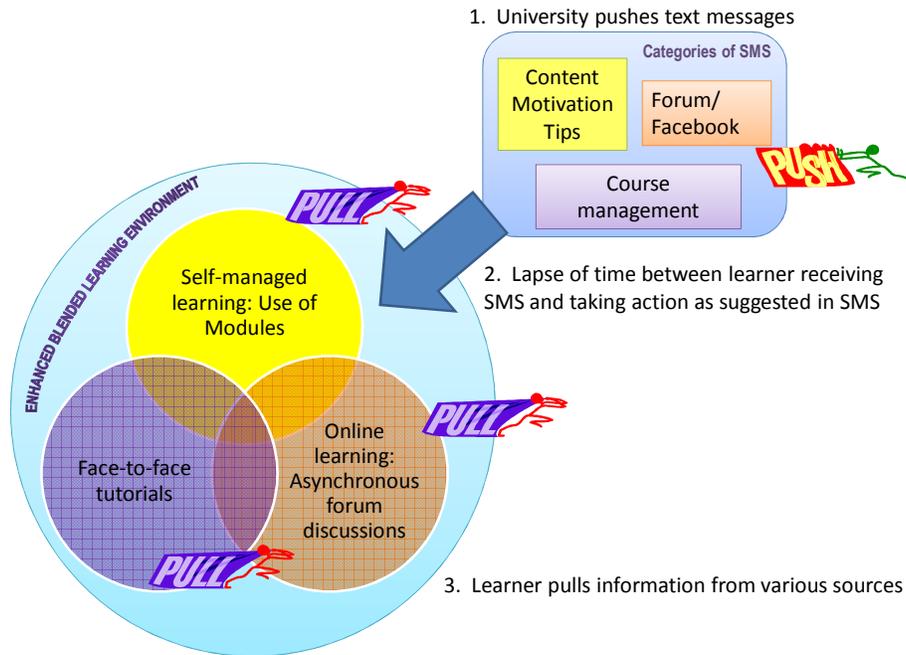
Mobile learning is also said to be effective in supporting self-managed learning and helping engage learners in various learning activities. This occurs through “strengthening the organization of the learning material and information, supporting communication, and helping the co-ordination between learning activities” (Ryu and Parsons, 2009, p. 10). This helps keep learners connected to their studies, their peers, their tutors and the university. Other advantages include transforming attitudes and feelings about a learning activity, maximizing engagement in the learning process, increasing motivation to learn and heightening satisfaction about the whole learning experience. This is crucial in narrowing the transactional distance gap that is commonly experienced by distance learners.

OUM’s Mobile Learning via SMS Conceptual Model

OUM’s mobile learning initiative was designed to enhance the blended learning mode of self-managed learning, face-to-face learning and online learning. The objectives of the initiative are to: (a) enhance the blend of learning modes at OUM, (b) increase the flexibility of learning offered to OUM learners, and (c) encourage and support ubiquitous learning (just in time, any time, any where).

Based on the recorded advantages afforded by mobile learning found in a review of related literature, five categories of SMS were identified: (a) Content, (b) Forum/Facebook, (c) Tips, (d) Motivation, and (e) Course Management. The ‘push and pull’ metaphor commonly used when discussing ways of getting information using digital technologies is incorporated in this conceptual model, albeit with some slight difference (see Figure 1). The push and pull does not occur in the same dimension, meaning to say learners do not ‘pull’ information via SMS. Instead, when the university sends the SMS, it ‘pushes’ information using mobile technology, and based on the category of SMS sent, learners respond by ‘pulling’ information using any one of the three platforms of the blended learning mode; they either get more information by (a) reading their printed or e-modules, (b) reading and sending posts in online discussion forums (Facebook or Learning Management System or LMS) with their peers and tutor, or (c) obtaining more information from their tutor during the face-to-face tutorials. The beauty of this model is that there is an added dimension to the whole interaction process, that of time as learners have the option of responding to the messages at a later point in time when they are free. This is what lends flexibility to the learning process.

Figure 1 Push and Pull Conceptual Model for Mobile Learning via SMS



Text messages are then developed firstly by selecting the more important learning outcomes for the course, then identifying the category suitable for the learning outcome and lastly creating the wordings for the SMS (bearing in mind the maximum number of characters is 145). Table 1 shows the SMS categories and their purpose.

Table 1 SMS Categories and their purpose

Category	Purpose	Example
Content	To help learners locate/remember important course facts easily	There are 4 pairs of learning styles: Active/Reflective; Sensing/Intuitive; Visual/Verbal; Sequential/Global. Which is yours? See Appendix 1.1
Forum/ Facebook	To remind and motivate learners to participate in discussion forums	Setting goals and time management are important to your studies. What is your goal? How do you apply time management? Share in Facebook.
Tips	To provide hints/strategies to learners on how to do well in their studies	Do you know you can change your password in myVLE? Try or ask your tutor
Motivation	To motivate learners to persevere in the learning process	When you believe something can be done, really believe, your mind will find the ways to do it. By Dr. David Schwartz.
Course management	To provide timely announcements/reminders on tutorial dates, assessments and other aspects related to course management	The exam date for OUMH1103 is April 5, 2010: 9.00-10.30 a.m. Topics covered are 5 to 10. Be prepared for the exam.

The Context of the Study

This study reports the mobile learning via SMS project for the course entitled 'Learning skills for open and distance learners' offered during the January 2010 semester. This course is a compulsory course offered to new learners in their first semester of studies with the university in 53 learning centres throughout the country. There were a total of five tutorials in one semester and a total of 28 SMSes were sent to 1,942 learners in a period of 11 weeks, averaging two to three messages per week. The SMSes were keyed into the university's customised workmate application and set for a delayed delivery at 7.30 pm according to the schedule prepared prior to the start of the semester. After each text message has been successfully delivered, it is archived in Twitter. For this particular semester, learners were given the option of participating in online discussions using the university's learning management system or Facebook, a social networking site specially set up for this course. The cost incurred for SMSes sent to each learner was only RM5.60 per semester and this was borne by the university.

2. Methodology

A mixed approach was utilized in collecting data on the effectiveness of initiative. Qualitative data were gathered from focus group interviews conducted during Tutorial 4 as well as from emails sent by learners while quantitative data were gathered using paper and pencil questionnaires. The instrument was administered to students during the fifth tutorial by the learning centre administrators throughout the country. The questionnaire comprised items on demography, feedback on the effectiveness of the five categories of text messages as well as on perceived impact and overall feedback. For perceived effectiveness of messages related to Content, Tips, Motivation, and Course Management, a six-point Likert-type scale was used: 1 (Strongly Disagree), 2 (Disagree), 3 (Somewhat Disagree), 4 (Somewhat Agree), 5 (Agree) and 6 (Strongly Agree). For these items, percent agreement is calculated by summing the percentages obtained for Somewhat Agree, Agree, and Strongly Agree. The scale given for items related to action taken upon receiving the SMSes for Forum/Facebook were 1 for Never, 2 Sometimes, 3 Often, 4 Very Often and 5 Always. Items on impact and overall feedback were on a scale of 1 to 10, with 1 for Strongly Disagree and 10 for Strongly Agree. The reliability coefficient of the instrument (Cronbach's alpha) was .97.

3. Findings

A total of 1056 completed questionnaires were returned. This gives a 99 percent confidence level in the data collected.

Of the 1056 respondents, only 1053 indicated their gender, of which 57.1 percent were females and 42.7 percent males. 68.3 percent were Malays, 12.2 percent Chinese, 10.8 percent Indians and 8.0 percent from other races. 0.7 percent (7 respondents did not indicate their race). In this study, the youngest learner was 19 years old while the oldest was 63. The median age was 29 years old.

Data collected on the learners' perception on the effectiveness of the various categories of text messages indicated that all five categories of SMSes were successful in achieving their intended purposes (Figure 2). The Content category SMSes appeared to have helped the learners to:

- (a) refer to concepts easily (91.9 percent agreement),
- (b) remember course facts more easily (91.6 percent agreement),
- (c) achieve learning outcomes (88.5 percent agreement), and
- (d) focus on key concepts (93.6 percent agreement).

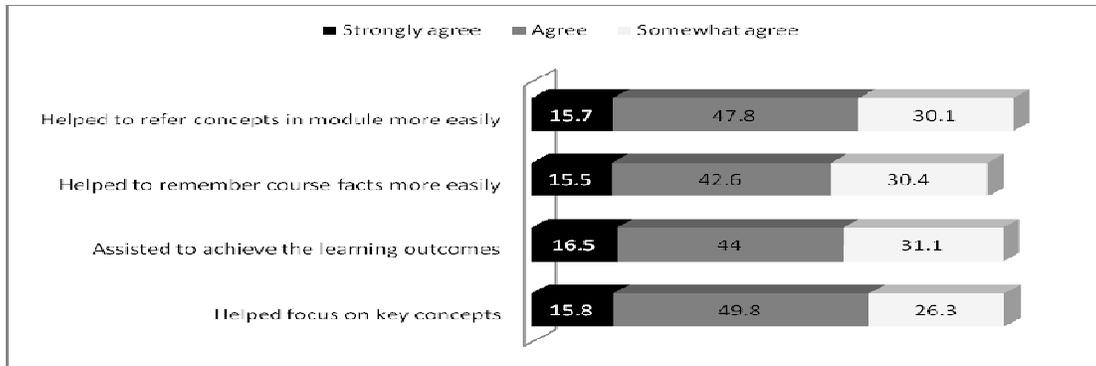


Figure 2 Perception of effectiveness of Content SMSes (Percent agreement)

Related to this, 88.6 percent of the respondents reportedly read the module as suggested by the text messages (with 22.9% always doing so, 40% very often and 25.7% often) and 87.3 percent referred to the module to find information (24.7% always, 35.7% very often and 25.1% often).

As for the perceived effectiveness of the Tips messages, 92.8 percent of the respondents were of the opinion that the SMSes helped them to monitor their own learning, 92.2 percent agreed that the hints were useful in helping them proceed in the learning process, and 93.6 percent thought that the messages provided them relevant guidance. (Refer to Figure 3).

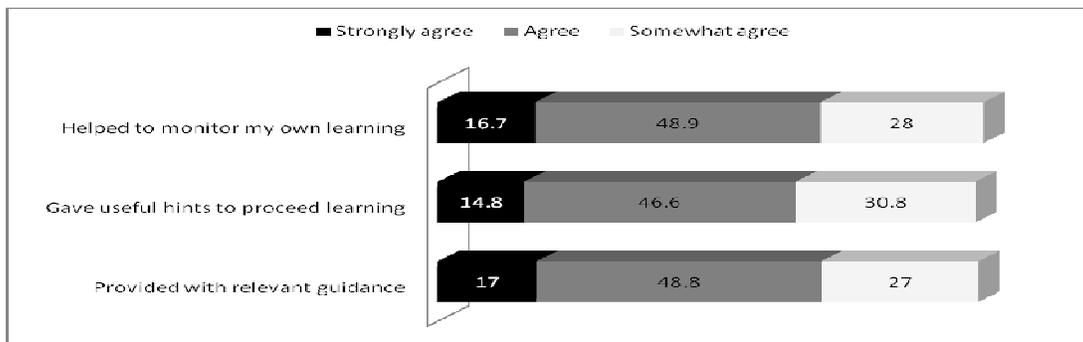


Figure 3 Perception of effectiveness of Tips SMSes (Percent agreement)

Additionally, the text messages were found to be successful in motivating the learners (Figure 4). The SMSes reportedly kept the learners interested in the course (91.4% agreement), encouraged them to set their own goals (89.9%) and put in more effort in learning (92.9%), excited them to participate in online discussion (89.9%) as well as made learning interesting (91.8%).

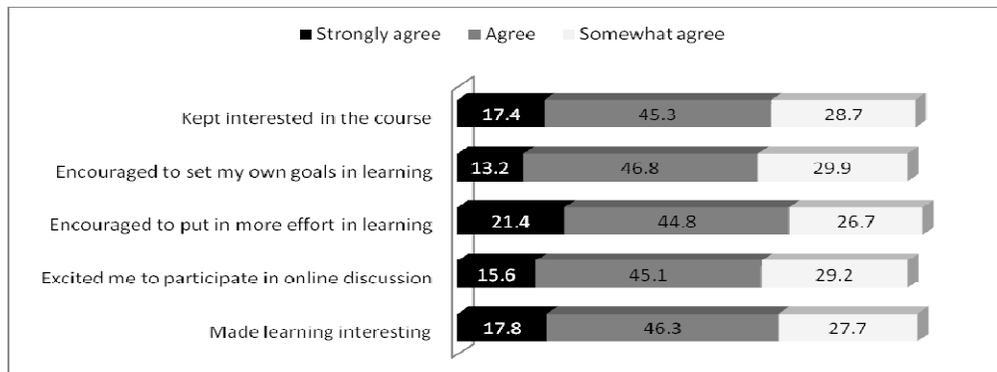


Figure 4 Perception of effectiveness of Motivation SMSes (Percent agreement)

Of all the categories, apparently the course management SMSes were the most well-received as the highest percent agreement were obtained for the two related items: Reminded learners of important details (95.5%) and gave useful information about the course (95.1%). (Figure 5)

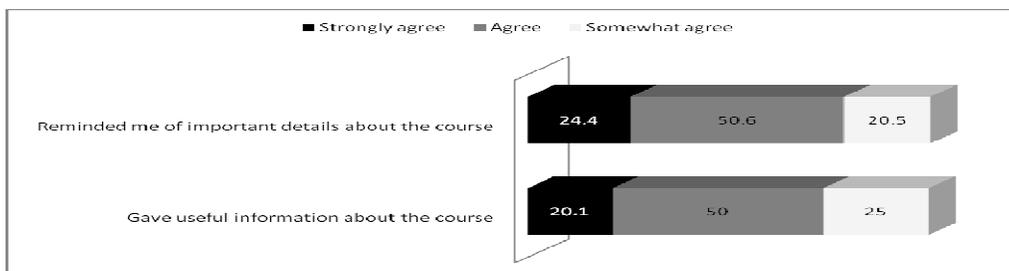


Figure 5 Perception of effectiveness of Course Management SMSes (Percent agreement)

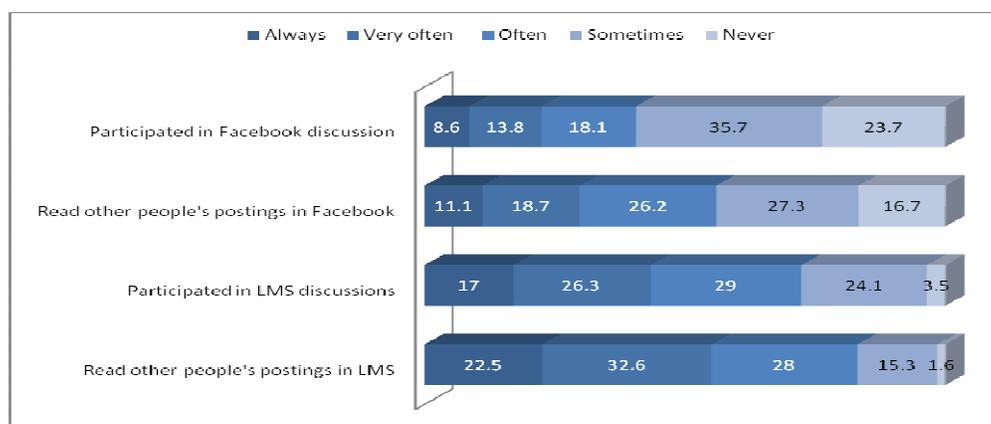


Figure 6 Effectiveness of Forum/Facebook category SMSes

On the contrary, the Forum/Facebook SMSes were not as successful in getting learners to participate in online discussion. Upon receiving the SMSes, more respondents logged into the LMS forum as compare to Facebook, also for both types of online discussions, learners logged in to read postings rather than to participate in the discussions (Refer to Figure 6).

Overall, the Mobile Learning via SMS initiative was found to be impactful to the learners. Respondents of the study were of the opinion that it:

- Helped them prepare for tutorials (mean = 7.61, SD = 1.74),
- Made them look forward to tutorials (mean = 7.58, SD = 1.80),
- Enabled them to learn anytime (mean = 7.53, SD = 1.83),
- Enabled them to learn anywhere (mean = 7.52, SD = 1.82),
- Encouraged them to stay focused (mean = 7.45, SD = 1.76),
- Sustained their interest (mean = 7.45, SD = 1.80), and
- Helped them manage learning (mean = 7.42, SD = 1.76)

In general, the respondents agreed that the project had made a positive impact on them (mean = 7.64, SD = 1.74), and that it had created a good impression of the University (mean = 7.88, SD = 1.74)

Qualitative data obtained from focus group discussions as well as via email generally indicated that the initiative was well-received by learners. Basically, learners appreciated having the text messages sent to them to alert them about important tasks and reminding them to study; some students likened the SMSes to an alarm clock as well as their personal assistant. Several of their comments are listed below:

- (a) "I really like this mode of learning because it helps me to be more prepared (for tutorials)",
- (b) (The text messages) "give me ideas on what topic to discuss (in LMS) know how to initiate topics to discuss ... (it makes me) prepared for the topic",
- (c) "I personally feel that Mobile Learning using SMS has benefitted me. I have enjoyed it; it made my self-learning more lively, interesting and more portable. It's like a friendly reminder to study and I don't feel stressed",
- (d) "The messages sent to us were very useful and each time I'm very busy with work, it reminds me and guides me. I am very happy with the Mobile Learning service",
- (e) "When I receive the messages, I feel that OUM is concerned about me. I don't feel alone and isolated and it reminds me to do my part in order to become a successful distance learner. I appreciate your messages!", and
- (f) "It alerts me to focus on my studies, that is good for me because I work full time".

4. Conclusion and Suggestions for Further Research

The relatively cheap cost of sending SMSes coupled with the ease in developing content as well as in its implementation, makes text messaging a sustainable mode of flexible and ubiquitous learning that could be used by distance learning institutions to supplement the blended learning approach. Findings from this study suggest that Mobile Learning via SMS is a viable and effective means of reducing the transactional distances of psychological and communication spaces often experienced by them. Learners are able to stay connected to their peers, their tutors and the university. This mode of learning appears to be efficient and effective in providing academic and administrative support to learners who are geographically distributed; it helps them stay focused and engaged in their studies. Additionally, it is able to motivate learners to persevere and it also assists them to be better able to manage their studies.

A better understanding on the extent to which mobile learning actually contributes to retention may be examined by conducting a longitudinal study on learners who receive Mobile Learning for consecutive semesters. In addition, the effect of this initiative on learning could be studied by comparing the examination results of learners who received the text messages and those who did not.

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