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Editorial Preface

Research Articles

E-Learning and M-Learning:
Challenges and Barriers in Distance Education Group Assignment Collaboration

Lisa Soon, Central Queensland University, Australia

ABSTRACT

This research explores the relationship between e-learning and m-learning by investigating distance education students' use of a learning management system, "Interact," for virtual team work. The paper explores their experience of online collaborative group assignments in the subject "Information Management in Organisations." International and local students were grouped. Each group undertook a case study project to propose solutions for identified problems in their chosen organisations. Students developed their assignment in wikis and used various tools for communication and document storage. An anonymous web-based survey was conducted after students completed the group assessment. The results reflected a wide range of factors including technology use, working with students from a different country, and challenges they faced completing group assessment online. Their feedback on their e-learning experience indicated the need for m-learning to address their concerns. The findings indicate a need for m-learning to support e-learning further, which could significantly improve the facilitation of online collaborative group assignments.

Keywords: *Collaboration, Distance education, E-learning, Group assignment, M-Learning*

INTRODUCTION

There is an advancement in teaching material delivery, with institutions moving away from students passively receiving print-based information such as paper materials from instructors to laser disks (or CD-ROMs) to web-based interactive learning. The School of Information Studies (SIS) at Charles Sturt University in Australia is the largest library education provider in Australia. It has been offering distance education for more than 30 years with no students enrolled in the face-to-face teaching mode. In the past, it adopted email and discussion forums to supplement print-based information delivery. In recent years, in addition to the learning management system 'Interact' (also known as 'CSU Interact – Sakai'), popular technology and tools like Skype, GoogleDocs, podcasting, chat rooms, wikis, blogs, Facebook and Second Life have been employed to increase class member interaction and engagement in distance education.

This paper reports a group assignment conducted in the subject[1] "Information Management in Organisations" offered in the third year of an undergraduate program 'Bachelor of Library and Information Management' in the first semester, 2009. In this research, the learning experiences of distance education

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students in collaborating with other students in group assignments in the subject using e-learning technology were explored. E-learning here refers to the use of technology to support online learning and teaching. In particular, it discusses the use of wiki, chat room, group mail, announcement and common repositories in a private project site provided to each group in Interact. Students used e-learning technology for their group assignment communications interaction and collaboration work regardless of their geographical locations. Students communicated and collaborated with group members at pre-arranged dates and times wherever they were. The use of e-learning technology by distance education students was mandatory in their group assignment. The subject coordinator set up the learning environment with all tools made available in Interact where the students used the tools for communication, collaboration, interaction and participation in assignment development online. In preparing the learning environment with group work in mind, group assignment activities and the required use of Interact tools were carefully considered, predetermined, and constantly monitored throughout the delivery of the subject. This was to ensure that students could reap the benefits of collaborative learning, hone team work skills and develop technological skills.

Many students opted for distance education in order to do their studies at times of their convenience. They wanted to plan their assignment tasks at a flexible time to fit into their normal routine and commitments. The results indicate that doing group work using e-learning technology purely from a home or office desk top computer could restrict their physical whereabouts, where the Internet access and computer use are restricted to fixed locations. Having considered the student learning needs, group assignment collaboration requirements and the technology to be put in alignment with the purposes of online group assignment, this research proposes a framework of learner requirements in online group work in distance education. It also discusses how the use of supporting portable m-learning devices such as iPhone, palm top and netbook could address learning needs and reduce some of the physical location restrictions.

This article adopts the following structure. The literature review section discusses e-learning and m-learning. It also explores the use of e-learning technology in distance education and highlights a gap in research. A methodology section follows to explain the case study method used in this research. The data collection techniques employed was a web-based survey and classroom observation. The results and discussion section explains the analysis of the results in this research. It also discusses the student experience in their use of e-learning technology in their group work such as their satisfaction with technology, the technology they actually used in their group work, challenges they faced in the online environment, and the possibility of m-learning. A conceptual model developed is based on the findings of this research to propose changes in online group work in distance education. The last section concludes this article. In adopting e-technology, this research stresses the importance of considering mobile devices to support personal and mobile learning (or m-learning).

LITERATURE REVIEW

E-learning refers to computer-enhanced learning and deals with both the technology and associated methodologies in learning using networked and multimedia technology (Lipshitz & Parsons, 2008). Titrade, El Baaboua, Sion, and Mihalcescu (2009) describe technology-supported education and learning as the instructions given through digital computer technology. Duncan-Howell and Lee (2007) explain that m-learning generally implies that the learning is "personal and portable". Scholars like Chen, Kao, and Shen (2003), Sharples, Taylo,r and Vavoula (2005), Seppala and Alamaki (2003), and Motiwalla (2007) share the view that mobile learning allows one to break away from teaching that takes place in a classroom, moving to another location while communicating via networks. In this paper, m-learning is regarded

as part of e-learning technology but with a clear difference to make learning portable and mobile with the use of mobile technology devices. Both e-learning and m-learning technologies, however, involve information and communication technology to facilitate learning. This research explores e-learning and its related student experience in order to recommend the opportunities and identify the challenges facing the implementation of m-learning.

Mixing technology-enhanced learner experience with more traditional learning experience has been seen as normal practice in the development of computer-assisted learning in higher education (Bliuc, Goodyear, & Ellis, 2007). In face-to-face learning and teaching, e-learning is used to complement the teaching delivery. However, the use of e-learning plays a much more critical role in facilitating learning and teaching in distance education. Papachristos et al. (2010) comment that the flexibility in distance education provides greater opportunities for individuals to study and educate themselves. Learners in face-to-face education can see and conveniently interact with their peers. In contrast, distance education learners do not usually see and interact with their peers unless it is under some form of instruction.

Further, literature suggests that distance learners require a great deal of interaction to overcome their feelings of isolation (O'Neil, Singh, & O'Donoghue, 2004). Beldarrain (2006) suggests that distance education courses should include interaction as the foundation of effective distance education practices.

Technology can achieve certain types of engagement and interactions that would not otherwise be possible in face-to-face dealings (Beldarrain, 2006). For successful virtual collaboration, social relations are as important as the project content and team expertise (Karpova, Correia, & Baran, 2009). E-learning technology can increase real-time collaboration between learners. E-learning technology has the potential to help distance students stay connected and therefore overcome their feelings of isolation. Despite the advantages brought about by e-learning technology, some scholars comment differently. Robey, Khoo, and Powers (2000) suggest that face to face communication is an important ingredient in making virtual teams more effective, especially when group members are from different countries or cultural backgrounds. Smith and Ferguson (2002) claim that with the benefits of technology come a number of disadvantages, including potential technology failures, the lack of face to face interaction and interpersonal cues, and from the instructor's viewpoint a great deal of time and effort is required in converting and/or creating new material specific to the online mode. Online group work collaboration is also effective in supporting problem-based learning as a pedagogy that uses project work to drive learning (Guthrie, 2010). To be successful in designing web-based learning or e-learning, Luminita (2010) suggests that the university should adapt itself to the current necessities of its students as well. E-learning and m-learning are both powered by technology to facilitate learning. However, although both use technology, m-learning has the added advantage of allowing m-learners to make one's learning "personal and portable" (Duncan-Howell & Lee, 2007, p. 224).

Dix et al. (2000) explore the location, mobility, population and device awareness of the interactive mobile system. They remark that the merging of computer and communication technologies allows the development of systems that provide immediate access to information with portable network devices. E-learning, if used by learners who have the additional device features of 'personal' and 'mobile', would turn e-learning into m-learning. Following this line of thought, Cucu, Christescu, and Christescu (2010) support the use of information technology in education by proposing four principles of education technology development. Their four principles are: 1) anytime and anywhere access, including mobile devices; 2) user-generated content; 3) assigning the users active roles in the use of technology; and 4) creating a relationship between natural activities and educational activities. The four principles should be applied to enhance user access to learning environments

and information and allow m-learning to happen in addition to e-learning.

Having reviewed the extant research, what is not clear is how distance education students feel about their use of new technology, especially when there is an assessment requirement to use technology in group assignments. The key research questions addressed in this paper are "What challenges and barriers do distance education students encounter in the use of e-learning technology to support online group work in distance education?" and "Can the adoption of mobile technology through the use of mobile devices for learning help overcome their difficulties?"

METHODOLOGY

It was unclear how distance education students used technology, their learning experiences, challenges and barriers they faced in their group assignments in real life. To explore this new unfamiliar context, the case study research method was deemed most appropriate for the research context. In educational research, case study enables the exploration of unknown scenarios of learning and teaching activities (Merriam, 1998, 2002). This research adopts a qualitative case study approach. Case study is warranted as this is a real-world situation where the boundaries between the phenomenon and its context are not clear (Yin, 2003, p. 13). This research adopted a web-based survey and frequent class observations throughout the semester as data collection techniques. The observation data were collected and analysed using a qualitative interpretive approach. The web-based survey was administered via Survey Monkey. The web-based survey consisted of closed- and open-ended questions. Survey Monkey provided many types of statistical reports to help in further analysis. It also provides some statistical figures for discussions. However, the open-ended answers were manually analysed using a qualitative interpretive approach. While the web-based survey had answers provided by students to address each question, observation of peer communications and teacher-and-student interactions was employed in this research to allow a deeper understanding of learner experience. The two collection methods provided rich, in-depth data from different resources to enable triangulation.

Towards the end of the semester, all students were asked to complete the voluntary, anonymous online survey questionnaire immediately after the completion of the assignment. The link to the questionnaire was sent to students' email addresses. Student perceptions were sought on a wide range of factors related to their experiences of online group assessment, including working with technology, communication and working with students from different countries. The survey questionnaire (see the Appendix) consisted of 14 main closed and open-ended questions and 5 demographic questions.

Class observation was used to monitor all student communications, interactions and other related group assignment activities in all the project sites. Most of the student communication and interaction happened in group emails, forum discussions and chat rooms. Group emails involved both the student-to-student and student-to-lecturer emails generated in the class throughout the semester. Observation also included a constant monitoring of student activities and feedback over the use of Interact tools for group work collaboration in all the project sites. All student group assignment activities like uploading materials in a common resource repository, chat-room messages, group email messages, announcements, calendar activities and the use of wikis for the assignments over the semester were closely watched and monitored.

Ethical clearance was sought from the university ethics office about the collection of on-line survey and observation data in this research. Consents were obtained from the students after an email announcement (with a consent form attached) was sent to all students involved about the observation of their use of the learning management system, "Interact", for their group assignments. Before proceeding to start the online survey, a screen about the research information and consent appeared. It

informed the participants that the participation was totally voluntary and they could simply withdraw at any point of time without any penalty. It explicitly stated that by clicking the start button to proceed with the online survey, a participant gave his/her informed consent to the participation.

Having obtained the data, they were used to produce concept maps. Key themes were formed after the concept mapping. They will be discussed in the case study section below under sub-headings. With the concept maps obtained from different sources, the data from the survey discussed above, and the observations undertaken through all the different activities, were crossed checked in a triangulation process. Triangulation is used to help validate the data (Stake, 1995; 2000). The information from other sources, as discussed in the paragraph above, was obtained from the main subject site and all related group project Interact sites and the "end of session online evaluation survey" were all used to cross-check the information obtained to derive validated truth. The level of satisfaction of students, concerns, comments, and feedback about the subject and the quality of teaching, the lecturer, communication, assessment, workload, etc. were part of the data collected for analysis.

CASE STUDY

The online learning environment created by using the university's learning management system called "Interact" was used as an official platform for group projects. Interact has a number of tools for communication and collaboration to support team work, including Wiki, Synchronous Chat, group mail, announcement and resources (multi-media repositories).

The primary case study involved 73 undergraduate students from all parts of Australia (a large continent with scattered distance education students) and around the world. Teams of four to five students were formed by the subject coordinator. Students were given access to the project site and encouraged to start team collaboration and communication with the tools provided. Some teams were formed by having international students grouped together with Australian students. Late enrolment students were placed into groups whose members had dropped out. The teams were largely randomly selected and members were unlikely to have knowledge of one another. The subject coordinator played a role of mediator and advisor in group work facilitation.

Each group was allocated a private group project site, including tools like chat room, group mail, announcement, repository and a wiki site. Groups were required to use the wiki to develop their assignments for marking. As an induction to the class, the subject coordinator sent an email to all students in the first week of the semester explaining the purpose and how to use each Interact tool for group work. All students were advised to press the help key '?' when using each tool to obtain tutorial information and explanation when in doubt. While Interact was mainly used, students were encouraged to use any other supporting technology such as Skype for voice chat and Google Docs for developing their assignments.

Although there were 73 students involved in group assignments, 51 students, or about 70% of the class, completed the questionnaire. The majority of students were females. The majority were under 30 years of age. Over 60% worked fulltime. Slightly over two-thirds of the students spoke English as their first language. A very high percentage of the class had broadband access to the Internet. Most students were Australians, some were from Hong Kong and a minority were from other countries.

RESULTS AND DISCUSSION

The class reported the use of 'Interact' and its tools (wiki, chat room, etc.) was a great challenge to use. Many students had not used Wikis before the group assignment. A majority of students described a need for more time for Wiki training before embarking on their required group assignments. According to the

cohort of students who participated in this research, their experiences showed that the Wiki assignment was the greatest challenge to them. The following results are based on the student experiences revealed in the web-based survey and observations.

Satisfaction with Technology

18.4% of the class strongly agreed that benefits were provided by using online technology for group work. 49% of the class supported technology use but they prefer to do group work off-line (i.e. not using technology for group work or want to work face-to-face). Hence, 67.4% (i.e. 18.4%+49%) of them accepted the use of m-learning or e-learning technology in distance education assignments. Some (12.2%) were neutral. But there were also some, representing a small number (6.1%) of the students, who strongly preferred to work off-line rather than using e-learning technology where students were dispersed across different time-zones. Among the many reasons given about their objections were unstable technologies, different personalities, time difference, location differences (e.g. members come from various countries) and not all members were committed to group tasks. The mix of responses indicate that, while some (67.4%) embraced technology and enjoyed using it in learning and group assignments, some (20.4%) disliked the use of technology in learning, especially involving group assignments where their group members were far apart.

Over 66% of students reported that they learned and used the Wiki and other Interact tools during this study. To reflect on the most valuable aspects of the group assignment experience, many students agreed that learning new technological skills was the most valuable aspect of their group assignment experience. They were amazed with their ability to use technology to communicate and conduct group work together online. They saw the final group assignment produced on the Wiki as a very great achievement. Distance education students appreciated the opportunity presented by the collaborative online group assignment which enabled them to learn new skills. Many of them noted that all members utilized technology extensively. Amongst all the tools provided to them for use, the Chat room and Wiki were the most popular.

Overall, the survey respondents expressed high satisfaction with online technology, and this agreed with and reflected their preference for the use of e-learning technology rather than offline work.

"After initial hesitation using wiki, I found it useful. It was nerve wracking having to put my own work 'out there' for other students to comment on but I ended up gaining confidence about my work and understanding of what was required."

"This subject provided an opportunity for my first group assessment for the first time using a wiki. Although I feel I could have achieved a higher mark working individually, it has been very challenging and a valuable growth experience."

Technology Used

Groups used different types of technology for different tasks in the process of developing their assignments. Synchronous and asynchronous tools complemented each other. They served different needs and were employed at different stages of the collaboration, providing a higher degree of flexibility in the computer-mediated communication.

Wiki was the main collaborative tool used for developing the assignment. The lecturer provided some guidelines on how to use the Wiki before releasing the assignment specifications to students. Each member of the group placed his/her contributed work as a section or paragraph of text and figures or tables on the Wiki. All members had

an equal right to edit, rearrange or reject the work of other members. One could simply make a comment on the work of other group members. An example is the linguistic aspect of revision done by native English speakers to the work from non English background group-mates. Wiki's history helped the instructor to monitor both the students' activity and their levels of contribution to the project and therefore made the assessment of individual members easier. Allowing the marker to assess individual contributions is a challenge for group members in group projects. The majority of students found Wiki useful in preparing the group assignment. Many students enjoyed the fact that Wiki allowed them to work on their group project at a time of their convenience.

Chat room was a popular synchronous communication tool. It allowed immediate feedback and real time discussions. Students used this tool to introduce themselves, to brainstorm ideas, to assign tasks and to make important decisions. The majority of students were satisfied with the chat room.

Students also used asynchronous communication tools like **group mail** and **announcement**. The announcement tool allowed group members to deliver general news, arrange meetings and generally highlight specific ideas or activities. Only 2 groups used this tool as alternative means were available for small group communication. Group mail was an internal email system to facilitate communication. It was heavily used by all 12 groups. The instructor was included in this system and received the emails from different groups. The closed nature of the email and inclusion of the instructor offered learners privacy as well as a greater sense of connectedness to their instructor. Most students found group mail useful.

'Resources' is a tool in Interact that allows a group to share and store documents or data. Both the learners and the instructor used resource folders to offer sample work, articles and other items not included as web links. Group members stored a variety of files that offered general support to their assignment case study. Most teams regarded 'resources' as an ideal place to deposit their drafts and store items locatable on the Internet for other team members to read or view later.

Challenges in the Online Environment

When asked about the most negative aspects of the group assignment experience, the student responses revealed them as: (1). Difficulty of arranging a chat time to suit everybody in the group (76.6%); (2). Being dependent on other people (68%); (3). The inequality of the contributions among members (55%); (4). Some members lacked the required skills (40%); and (5). Conflicts amongst the group members (19%). The second, third and fifth negative aspects are common problems in group assignments regardless of online or offline assignments.

Students generally highlighted some critical challenges they faced. The greatest challenge identified was the synchronous communication and time issue. Although 78% of participants found the chat room facility useful for synchronous communication with their group members, it was difficult to arrange a chat time to suit everybody in the group. This was identified as the major barrier for almost 80% of students. At the time of assignment, there was a one to four hour time difference between Australia and international students and among Australian students themselves. As most students were working, arranging a time for synchronous communication was a challenge. Many were not able to attend all chat sessions owing to schedule conflicts.

They indicated that some members exhibited a lack of required skills. It appeared that for about 40% of respondents this lack of required skills to work with technology was a negative aspect of group work. More than half of the participants had no prior Wiki work experience.

Becoming familiar with the technology and learning how to use it at the same time were overwhelming for a number of students. Several students reported their initial frustration with the process of working online because they had to learn how to use the technology:

"The Wiki was fine once you figured out how to use it and what all of the codes were, but that took a bit of learning."

On the whole, they felt the impact of the lack of face to face meetings using the current technology. As the Interact chat room allowed only instant messaging, there was no video conferencing. A few students commented that their dial-up Internet access sufficed only for instant messaging and they could not afford broad-band technology for video conferencing chats. Analyzing responses to open ended questions in the survey revealed that the lack of face to face meetings was a barrier in effective communication among multicultural groups. Given the language differences between Australian and Asian students, a lack of nonverbal information and contextual cues between group members made the interaction and understanding more challenging:

"It is hard to conduct meetings online as your meaning can be misunderstood. I believe it would be good to meet the people within your group and to have some meetings in person."

"I think it would benefit the group to be able to meet and get to know one another which would help with understanding what each are saying about a particular subject."

"communicating with someone online when I know nothing about them, and don't want to make any false assumptions, and apart from that communicating online as opposed to in person is always different no matter who you are."

"To meet online, your meaning can be misunderstood."

Students had varying skill levels in using the technology and came from different cultural backgrounds. Despite the challenges, all groups (except one) completed their wiki assignments successfully.

The major problems and challenges include the lack of required skills in using technology, time-zone differences and lack of face-to-face meetings. Distance education allows flexibility in terms of time, in that students can choose to study whenever and wherever suits them. Online learning, however, provides a time benefit whereby learners have more time to think and compose responses than would have been available in a face to face classroom (Gabriel, 2004). However, it has its challenges when it comes to synchronous communication. One student reported that she chose to study in distance education mode in order to study during her convenient time, but the group assignment worked against that flexibility. She commented that as a distance student she was able to fit her studies around her work/family commitments. This was not possible with a group assignment which caused frustration and resentment, as it was difficult to fit into a mutual schedule and she often felt guilty if her participation was not possible.

To overcome these barriers it is suggested that groups use video chats as alternatives to face to face meetings. In addition, to facilitate communication among group members, there should be introductory sessions prior to group assessment when students can introduce each other to their group, talk about their professional backgrounds, interests, some personal information (e.g. hobbies) along with showing the group their pictures. To reduce the need for synchronous communication, the structure of group assessment should be as clear as possible with clearly divided tasks for each group member. Developing these strategies will make virtual collaboration in a learning environment a more satisfying experience for both students and instructors. On the whole, this section has addressed the challenges and barriers that distance education students encounter in the use of e-learning technology to support online group work in distance education.

Is Mobile Learning Possible?

In the light of student challenges and barriers based on the above, students need to be willing to embrace technology, have mobile technology device awareness and adopt/use the technology. The findings suggest that the basic acceptance and use of e-learning technology are of paramount importance in order to break through the e-learning technology and move onto m-learning. It is seen that only when a learner is 'technology-ready' will the learner consider the added mobility features by using mobile devices to allow 'personal' and 'portable' learning to happen. Mobile devices can support student group communication and collaboration by providing anywhere and anytime access if they can arrange a suitable group discussion or group work task time. The devices should be portable and handy for use. Mobile and wireless devices powered by wireless access protocols are added into the technological infrastructure for mobility to make e-learning act like a mobile system (Motiwalla, 2007; Chen, Kao, & Sheu, 2003; Seppala & Alamaki, 2003; Dix et al., 2000). The design and use of m-learning further support mobility in education providing international access to mobility of information and knowledge (Sharples et al, 2002, 2005). Nonetheless, students should be encouraged to use the mobile devices like smart phones, palmtops, netbooks, etc, that connect to the Internet and get online for group work anywhere and anytime they like. For example, a student who wanted to care for a sick elderly family member at a hospital, and would like to participate in online group discussion, could spend an hour of group work discussion virtually.

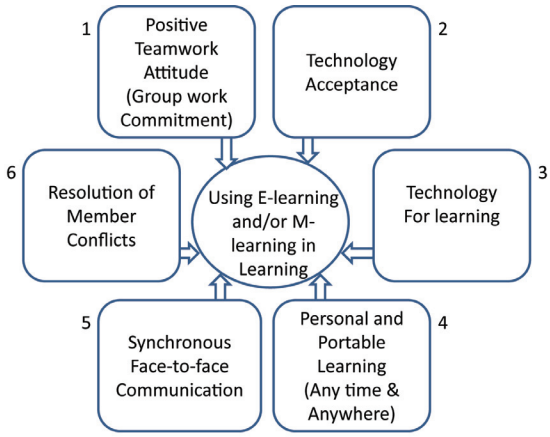
Creating and staying connected within a virtual collaboration work space in any time that suits any student according to one's needs are critical. M-learning will help if group members can adopt and use the mobile devices in learning. In a virtual learning environment, if e-learning technology is strongly recommended for use, higher education institutions should also recommend m-learning that supports mobility and portable learning to students. Nevertheless, while m-learning provides the benefits of portability, mobility and personal choices, mobile technology does not have the capacity to address social and cultural issues associated with learning.

A Framework of Learner Requirements in Online Group Work in Distance Education

Students actually enjoy learning the use of any new technology and get overjoyed after they find they have obtained a new ability to use technology, based on the observation results of this research. Figure 1 is developed using the analysis results in this study. Figure 1 on the whole shows that students must be instructed, made aware of, given a chance to learn and be persuaded into using e-learning or supporting m-learning technology (as affordable technology for learning) in an effective learning environment. In the middle of Figure 1, the circle represents a student's adoption and use of e-learning. The six boxes around the circle show the contributing factors to the successful adoption and use of technology for online group work by distance education students.

In Figure 1, 'Positive Teamwork Attitude (Group Work Commitment)' (box 1) makes it clear that, for the purposes of group assignments, students should be informed of the required positive team work attitude expected from each student, instilling a sense of group work commitment in all online students. 'Technology Acceptance' (box 2) suggests that each student should be guided, learn, accept and know how to use technology based on the subject requirements. A subject outline which indicates clearly that students must use the Internet and e-learning for the purpose of the study indicates a clear technology acceptance. 'Technology for Learning' (box 3) explains that technology must be used by distance education students in order for the online group assignment collaboration to happen. Technology these days is affordable. In the subject outline, students must be informed of the needs for e-learning, the Internet, LMS or other technological use expected for the

Figure 1. A framework of student requirements in online group work in distance education



online group work for the purpose of the subject. 'Personal and Portable Learning (anytime & anywhere)' (box 4) shows that, as the students of the e-learning or m-learning technology are seeking the convenience of study at a time flexible to them, they should try to identify and use the type of technological device that most benefits them with the suitable 'personal' and 'portable' learning features. 'Synchronous Face-to-face Communication' (box 5) explains that having the features of the e-learning environment, if the synchronous face-to-face communication is achieved, the m-learning device will 'add value' to students by allowing them to access the communication messages anytime anywhere to let them enjoy the 'personal' and 'portable' features of the technology for learning. 'Resolution of Member Conflict' (box 6) discusses that technology cannot replace real physical face-to-face interactions. Even in physical face-to-face interactions, member conflicts happen in group work. To use the technology effectively, the instructor or teacher must monitor and step in at any time to resolve member conflicts in the online group assignments (e.g. join the group in their chat room discussion).

All the six factors contribute to an effective learning environment and all six factors have their impact on the use of technology. It is proposed that educators should ensure that the six factors are used as a check list to assess what has been provided and established in a learning environment to ensure that e-learning and/or m-learning can be effectively used.

This section discusses the adoption of e-learning technology by also considering mobile devices to support personal and mobile learning. It establishes that mobile technology with the additional features of enabling personalisation and mobility has added value to e-learning by giving students more help in their learning experience.

CONCLUSION

Currently, more and more emerging technologies have allowed different things to happen in our lives. E-learning technology has allowed learning to take place on the web, whereas mobile technological devices further allow web-based learning to happen anywhere, anytime using many types of mobile devices. The findings from this paper have demonstrated that when distance education students are given an online group work assignment, they are able to learn and accept the use of e-learning for group work, despite their geographical distance and time zone challenges in meeting their group members. Being away from their face-to-face classrooms, they see their mobility in different geographical places and their ability to use the Internet for group work an enjoyable experi-

ence. In a distance education context, the use of mobile devices to access the same information and use collaboration tools such as in the e-learning computer or devices accessing the same information anytime and anywhere will give distance education students many more different advantages.

There are many benefits associated with using online collaborative group assessment in distance education. A student felt that even though he/she could achieve a higher mark by working individually, he/she enjoyed the valuable and challenging growth experience. One major benefit is to encourage mobile learning as distance students would then have many opportunities to collaborate with team members whenever and wherever they like. The challenge is that they need to learn how to use the appropriate mobile technology devices. An important outcome is that students need to know which and how mobile technology can help them perform group work in order to use it. These benefits are particularly important to a community of geographically distant students, in different time zones and keen to communicate, collaborate, interact and participate in their group work activities with the convenience to fit these activities into their lives using their mobile technology devices.

The results of the case study suggest that students are satisfied with the technology used in group work. If e-learning technology enables the groups to complete work collaboratively, the adoption and use of m-learning technology would have a much greater impact on enabling them to study conveniently, collaborate and participate in group work anywhere and anytime. As m-learning is powered by mobile technology with convenient and portable devices, students can give and take feedback and chat more freely in group work. Duncan-Howell and Lee (2007), however, caution that the use of m-learning tools themselves does not guarantee their potential being realized. There is a great need to encourage the adoption and use of m-learning devices. The most important challenge now is to ensure that educators have the ability to design and develop pedagogically sound opportunities and environments that enhance learning using m-learning technology.

This research presents a conceptual model which was developed based on a single case study which is a limitation of the research. The model will need to be extended or refined with more data collected from similar case studies. The paper is however certainly a good starting point for future research to investigate how more specifically the model illustrates how m-learning can help to make e-learning more feasible and useful. Further research effort will be needed to produce much deeper reflection on some issues discussed and their possible solutions. The findings show an acceptance of technology use in the compulsory distance education online group work assignments despite the earlier resistance to doing group work offline. Further research may explore how and what m-learning devices can be used to better enable distance education students to cope with work and studies. M-learning research may also investigate how to address social and cultural issues associated with the use of mobile technology in learning.

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ENDNOTE

1 A *subject* refers to an individual unit of study (usually one semester in length) that is worth a certain number of credit points. A series of subjects make up a *course*, such as Bachelor of Library and Information Management degree.

Lisa Soon is a lecturer in Central Queensland University, Mackay, Australia. She holds a Bachelor of Information Technology from Queensland University of Technology, Australia, and Master of Arts (International Studies) as well as Doctor of Philosophy from Griffith University, Australia. She has considerable industrial as well as academic experience. She is a member of the Institute of Electrical and Electronics Engineers, Association for Computing Machinery, Australian Computer Society and Australian Institute of Export. Her main research interests include knowledge management, knowledge and technology, and knowledge in online learning.

APPENDIX

Group Work Evaluation Survey

Section 1

1. What were the most valuable aspects of your group assignment experience?

   - ☐ Working with students from a different country
   - ☐ Gaining communication skills
   - ☐ As a group you can achieve more –better quality
   - ☐ Learning to work with Wiki and other Interact technologies
   - ☐ Interactions with other students and overcoming feeling of isolation
   - ☐ Learning from others and sharing ideas
   - ☐ Learning to work in a group, which reflects real industry
   - ☐ Other (please explain)

2. What were the negative aspects of this group assignment experience?

   - ☐ Some members lack required skills
   - ☐ Difficulty of arranging a chat time to suit everybody in the group
   - ☐ The inequality in the contribution among members
   - ☐ Being dependent on other people
   - ☐ Conflicts
   - ☐ Other (please explain)

3. What aspects of your group assignment experience could be improved?

4. This is the first time you have used wiki.

5. You would rather work alone than in any kind of group
O Strongly agree O Agree O Don't know O Disagree O Strongly disagree

6. You would have preferred to do all the group work off-line rather than using online facilities
O Strongly agree O Agree O Don't know O Disagree O Strongly disagree

Any explanation?

7. All members of your group did a fair share of the work for this assignment
O Strongly agree O Agree O Don't know O Disagree O Strongly disagree

Any comment?

8. You found the Group Mail in Interact useful in communicating with the group members
O Strongly agree O Agree O Not sure O Disagree O Strongly disagree O Did not use

9. You found the announcement in Interact useful in communicating with group members
O Strongly agree O Agree O Not sure O Disagree O Strongly disagree O Did not use

10. You found the Chat in Interact useful for communicating with group members
O Strongly agree O Agree O Not sure O Disagree O Strongly disagree O Did not use

11. You found the group wiki useful in preparing the group assignment
O Strongly agree O Agree O Not sure O Disagree O Strongly disagree O Did not use

12. You found the group wiki easy to use
O Strongly agree O Agree O Not sure O Disagree O Strongly disagree O Did not use

13. Any additional comments or suggestions on using wiki in this assignment?

14. What is your feeling about working with students from a different country? Please explain why you liked or didn't like it.

Next

Group Work Evaluation Survey

Section 2

1. What is your gender?
   ○ Female ○ Male

2. What was your age at your last birthday?
   ○ Under 25 ○ 26-30 ○ 31-35 ○ 36-40 ○ over 40

3. Is English your first (native) language?
   ○ Yes ○ No

4. How many hours a week do you work in a paid employment?
   ○ I don't work ○ less than 20 h/w ○ 21-30 h/w ○ Full time employment

5. How is your internet access?
   ☐ No internet access at home ☐ I have dial-up internet at home ☐ I have broadband (ADSL, Wireless) internet at home

   Others (please specify)

Prev Done