



An Evaluation of Good Practices in E-Learning in the 21st Century: Student and Lecturer Perspectives of Learning and Teaching in a Blended E-learning Context

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Abstract

Today, information and communications technologies are finding their way to classrooms around the world at an exceedingly rapid pace. In the wake of this influx, what are some of the good practices and issues with using technology with a blended learning context to enhance student learning experience? E-learning with a blended context is usually viewed as a combination of face-to-face and online delivery methods, with the aim of each complementing the other. Such an approach should, therefore, influence educators and higher education student perception of the learning environment and, subsequently, study approach and learning outcomes. The data was collected through semi-structured interviews with lecturers and students from the University of Singapore (UniSIM) where E-learning is widely used as pedagogy. The interview questions were divided into four sections: knowledge and experience, design and use, resources needed and the evaluation of the use of blended E-learning. The interviewed lecturers were also requested to send an online questionnaire to their students to collect views and perceptions of the use of blended E-learning. The benefits of using blended E-learning for enhancing student learning experience, perception and attitudes have also been identified. The similarities and differences between lecturer and student views on E-learning blended context have been discussed. These discussions form the basis of recommendations for the development of learning and teaching practices that should enhance student learning experience in meeting the needs of the 21st century workforce.

Key Words: Online Learning, Blended E-learning and 21st Century Education

Introduction

The methodological approach presented in this paper was based on practices at SIM University (UniSIM) in Singapore. UniSIM started in 2005 as the first and only university in Singapore dedicated to adult learners to gain more skills and knowledge; to earn their degrees for lifelong learning, and for learning at any time and at any place. As Singapore's only privately-funded university dedicated to adult learners, UniSIM plays an important role of supporting Singapore's economic growth by providing skills and knowledge upgrading pathways for working adults to enhance their learning experiences. UniSIM adopts a flexible and practice-focused teaching and learning strategies and offer programmes that are rigorous, multi-mode and relevant – factors that are highly valued by busy executives who demand learning that can be tailored to suit their busy schedules, and knowledge and skills, which are immediately applicable to their jobs.as part of this plan. One of the strategies mentioned in the plan was to include the use of the learning management system (LMS) of blended E-learning as a delivery method. UniSIM's approach to blended learning involves utilizing a combination of traditional face-to-face and online instruction. In blended E-learning courses, the learning materials are delivered through face-to-face interaction, but they are also available via a robust learning management system known as MyUniSIM via Blackboard in order to provide support and enhance after-class, online interactions for instructor–student and student–student communication.

The aim of this paper is to evaluate the practices of using E-learning pedagogies for teaching and learning and to examine the benefits that blended learning provides to student learning experience focusing on the case of a single institution, SIM University (UniSIM) in Singapore. The application of blended learning for undergraduate programs at UniSIM and student experience has been evaluated. The benefits of using blended learning for enhancing student learning experience, student and lecturer perceptions of and experiences with a blended E-learning context are also identified. The lecturers are also interchangeably referred to as educators and teachers in this paper. In addition, the similarities and differences between lecturer and student views on blended learning are discussed. These discussions form the basis of recommendations for the development of learning and teaching practices and approaches that will potentially enhance student learning experience in a blended E-learning context.

Blended E-learning Context

There has been much discussion over the term "blended learning" in recent years, yet there continues to be no agreed-upon single definition (Jonas & Burns, 2010; Sharpe, Benfield, Roberts, & Francis, 2006). There is, however, a common theme presented in the literature – the recognition of some combination of virtual and physical environments. This common theme is evident as Graham (2006) describes blended learning as the convergence of face-to-face settings, characterized by synchronous and human interaction, with Information and Communication Technology (ICT) based settings, which are asynchronous, text based, and involve humans operating independently. Garrison and Vaughan (2008) define blended learning as "the thoughtful

fusion of face-to-face and online learning experiences" (p. 5) and emphasize the need for reflection on traditional approaches and for redesigning learning and teaching in this new terrain. Littlejohn and Pegler (2007) also observe that blended learning is a useful approach because it changes the focus of learning design by shifting the emphasis from face-to-face and online environments to the design of issues, such as considering the process and synergy of blending between online and face-to-face environments.

Driscoll (2002) identifies four different concepts of blended learning, which Oliver and Trigwell (2005) summarize as follows (p. 18):

- combining or mixing web-based technology to accomplish an educational goal;
- combining pedagogical approaches (e.g., constructivism, behaviorism, cognitivism) to produce an optimal learning outcome with or without instructional technology;
- combining any form of instructional technology with face-to-face instructor-led training; and
- combining instructional technology with actual job tasks.

Sloman (2007) argues that blended learning should not simply be considered in terms of delivery and technology. According to Sloman (2007),

If the term blended learning is to have longevity ... we must extend its use beyond technology. It must be as much about varying learning methodology as it is about training delivery. We must understand more about what motivates learners, what support they need and how these supportive interventions can take place in practice. Only with this understanding we can get the "blend" right. (p. 318)

Thus, blended learning is itself a blend. It is a mix of pedagogical approaches that combines the effectiveness and the socialization opportunities of the classroom with the technological enhancements of online learning (Dziuban, Hartman, Juge, Moskal, & Sorg, 2006). Contained within the mix is a paradigm change in which the emphasis shifts from teaching to learning (Nunan, George, & McCausland, 2000). In order to enhance this shift, a blended learning course should also increase the interaction between the educator and students, and also among students. It should furthermore enhance the mechanism for integrating formative and summative feedback in order to boost students' learning experiences (Yen & Lee, 2011). Therefore, blended learning is a fundamental redesign of the instructional model with a shift from teacher-centred to student-centred instruction where students become active and interactive learners.

Blended learning can also be considered good practice. In other words, the use of blended learning as a delivery method can help the manifestation of two of Chickering and Gamson's (1987) Seven Principles, which are: to encourage students to engage in active learning; and to encourage contact between the students and teachers (lecturers), as discussed, in this paper. The use of blended learning can also potentially elicit another good practice principle, which is to give prompt feedback, as blended learning usually involves online interaction, which can facilitate feedback. However, whether prompt feedback occurs depends on how frequently the lecturers and students use the relevant online platform.

Literature Review

There has been systematic and extensive research into the quality of students' learning in higher education (Biggs & Tang, 2011; Laurillard, 2002). Outcomes from this paper research have helped to identify the key concepts related to quality learning in higher education.

According to Entwistle, McCune, and Hounsell (2002), and as depicted in Figure 1, factors influencing the quality of learning achieved include course material presentation and both the type of teaching–learning environment provided as well as the students' perceptions of this environment.

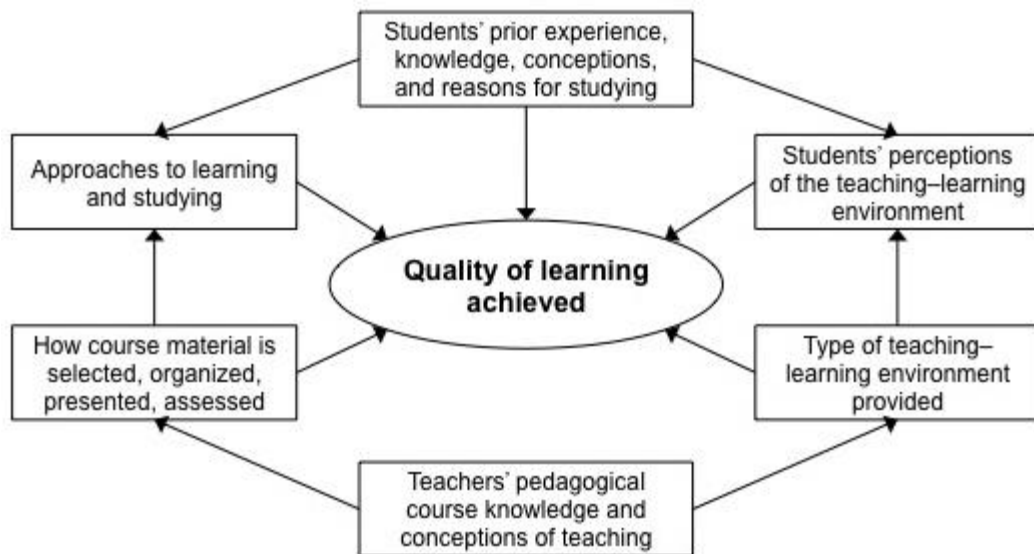


Figure 1. Concepts related to the quality of learning at university (Entwistle, McCune, & Hounsell, 2002)

A common factor in these elements is the degree of pedagogical knowledge of university lecturers, which dictates both the design of the course materials and the learning environment. Lizzio, Wilson, and Simons (2002) share similar findings. They investigated "the relationship between university students' perceptions of their academic environment, their approaches to study, and academic outcomes" (p. 27), and stress the practical significance of these relationships for educators wishing to understand the impact of course design. They conclude that elements of the learning environment, which can be influenced and controlled by lecturers, affect not only how students approach studying, but also the subsequent learning outcomes they attain (Lizzio et al., 2002). This echoes the seminal work of Chickering and Gamson (1987), which are highly relevant to postgraduate courses as well. Chickering and Gamson posit that good practice "encourages contact between students and faculty," "encourages cooperation among students," "encourages active learning," "gives prompt feedback," "emphasizes time on task," "communicates high expectations," and "respects diverse talents and ways of learning." In order to ensure students have successful learning experiences, it is therefore important to consider these principles in conjunction with the elements and design of the learning environment.

Williams, Bland, and Christie (2008) define blended learning as a combination of traditional face-to-face learning and distributed learning, the latter of which "is an

instructional model that allows lecturers, students, and content to be in different locations" (p. 43). A main feature of distributive learning is that the learning environment is designed to accommodate the fact that students have different learning needs and preferences. This pedagogical model encourages students to learn in an interactive and collaborative environment, and at their own pace and in their own time (Graham, 2006). Yen and Lee (2011) assert that "blended learning, thoughtfully combining the best elements of online and face-to-face education, is likely to emerge as the predominant teaching model of the future" (p. 138).

Garrison and Vaughan (2008) describe best practices for blended learning implementation in higher education. They underscore the need for a seamless connection between the face-to-face and online components in order to ensure a truly blended learning environment. Moreover, they advocate the superimposition of various other pedagogies, as appropriate – lecture, problem-based learning, just-in-time teaching, cooperative learning, and others – on the blended framework.

There is considerable evidence attesting to the fact that blended learning can positively impact student achievement. Ginns and Ellis (2007) explored the relationships between students' perceptions of the E-learning environment, their approaches to study, and their academic performance. They found that students differed widely in their perceptions, resulting in variations in study approaches and grades. In other words, students with positive perceptions of the E-learning environment tended to obtain better grades, and vice versa.

Benefits of Blended Learning

Blended learning benefits students and institutions. It facilitates improved learning outcomes, access flexibility, a sense of community, the effective use of resources, and student satisfaction. Several research studies have demonstrated that courses using blended learning as a delivery method contribute to improved learning outcomes for students (Twigg, 2003a). Twenty out of the thirty institutions that participated in research funded by the Pew Foundation in the United States reported having improved learning outcomes (Twigg, 2003a). Twigg (2003a) and also report that course redesign has resulted in students achieving higher grades, greater knowledge, and greater understanding of course concepts.

Another key benefit of blended learning is the increased flexibility of access to learning that reinforces the student's autonomy, reflection, and powers of research (Sharpe et al., 2006; Tam, 2000). Blended learning modules have a combination of face-to-face and online components. This format allows learners who live some distance from a university to enrol in a program. In addition, the online components benefit other learners by allowing them to work whenever and wherever they prefer, as they can access the Internet without making the journey to campus. It also enhances student ability to control their own pace of learning. Via blended learning, students are able to catch up on a course if and when they can (Owston, Wideman, Murphy, & Lupshenyuk, 2008; Smyth, Houghton, Cooney & Casey, 2012).

Garrison and Kanuka (2004) explored some of the benefits of using blended learning in higher education institutions. They describe how blended learning has a transformative potential, offering institutions the opportunity to embrace technology,

encourage a community of inquiry, and support active and meaningful learning. Owston et al. (2008) looked at professional development in schools of education and describes how blended learning has the ability to foster a professional learning community and yet still allow for the development of social cohesion due to the inclusion of a face-to-face component.

Blended learning also promotes student satisfaction. Blended learning enables the students to become more motivated and more involved in the learning process, thereby enhancing their commitment and perseverance (Sharpe et al., 2006). Student satisfaction has also been reported to be higher in blended learning courses compared with purely face-to-face courses (Owston et al., 2008; Twigg, 2003a). Therefore, it can be said that blended learning is beneficial to students.

Challenges of Blended Learning

The use of blended learning can pose challenges for students and educators (lecturers), too. Unrealistic expectations and feelings of isolation are challenges for students, while educators are challenged by time and support issues. Both students and educators encounter challenges presented by technology issues.

Vaughan (2007) cites studies suggesting that students enrolled in blended courses can sometimes have unrealistic expectations. The students in those studies assumed that fewer classes meant less work, had inadequate time management skills, and experienced problems with accepting responsibility for personal learning. Students in such courses have also reported feeling isolated due to the reduced opportunities for social interaction in a face-to-face classroom environment (Smyth et al., 2012).

Having difficulty with more sophisticated technologies is another challenge for implementing blended learning. This was particularly the case where students had to rely on slow Internet connections (Smyth et al., 2012).

Another challenge related to technology is the pervasive access the technology affords. Although the flexibility to learn online and from a distance provided by blended learning is perceived as advantageous, the pervasive access may also be invasive to students' personal lives. For some, the online component results in more time devoted to study and less to personal concerns. This can lead to students feeling overwhelmed and tired (Smyth et al., 2012).

However, just as students must adapt to blended learning technology, educators must be taught to use the technology from the user end in order to effectively facilitate student learning. The attitude, readiness, and technological skills of the educators as course facilitators are equally important, as all of these factors affect how successfully they use, develop, and update the technology-based tools and resources in operation (Harris et al., 2009).

The final challenge of blended learning is the difficulty in acquiring new learning technology skills, such as how to foster online learning communities and how to facilitate online discussion forums among students and between students and course facilitators (Dziuban & Moskal, 2013). Hence, the aim of this paper is to fill those gaps; and to identify and evaluate good practices in blended E-learning. Based on the findings, several recommendations can be made on pedagogy to enhance higher education students' learning experiences in the 21st Century.

Methodology

The data for this research were collected through semi-structured interviews with lecturers teaching in the Faculty of the School of Arts and Social Sciences (SASS), UniSIM Singapore. There was also an online questionnaire survey via Survey Monkey given to students. This survey was used to collect their perceptions and opinions of their blended E-learning experience.

Four lecturers teaching in a blended E-learning environment at UniSIM were interviewed. The lecturers are referred to in this paper as Lecturer A to Lecturer D. The interviewees' years of experience ranged from five to 29, resulting in an average teaching experience of 19 years. Their experience using various forms of blended learning, including online learning, ranged from one year to more than 10 years.

The semi-structured interviews, which took place in the interviewees' offices, lasted between 45 and 90 minutes. Interviews began with the collection of professional background information and proceeded to a series of key questions. Questions were divided into four sections: knowledge and experience of blended learning, design and use of blended learning, resources needed for blended learning, and evaluation of the use of blended learning. Finally, interviewees were given the opportunity to add further comments. The interviews were recorded, transcribed, and coded with similar themes. These were then sent to the lecturers as a reference to read through the transcripts to ensure reliability and validity of the data.

The interviewed lecturers were requested to send an online questionnaire to their students to collect views on blended learning. Eighty questionnaires were returned. The majority of respondents (50%) were first-year undergraduate students. The remaining respondents were second-year undergraduate (19%), third-year undergraduate (10%), fourth-year undergraduate (6%), and postgraduate (15%) students. The predominant age group of the respondents (80%) was 18 to 25 years old; only 15% of students were between 26 and 35 years old, and 5% were over 35 years old.

The student questionnaire was adopted from the student survey questionnaire shown in Appendix of Garrison and Vaughan's (2008) *Blended Learning in Higher Education: Framework, Principles, and Guidelines*. The questionnaire was constructed using Survey Monkey. The survey began with the collection of background information, such as year of study, mode of study, and age. The key questions were divided into four sections: the first section queried students' experiences of blended learning; the second looked at students' overall satisfaction with blended learning; the third asked the students to comment on blended learning; and the last section asked students to compare blended learning with face-to-face learning. Please see the Appendix for a copy of the student questionnaire.

Results

Lecturer Experiences and Perceptions – Benefits of Blended E-learning

Based on the findings from the interviews, the primary benefit of using blended learning is flexibility. This flexibility accommodates students to the varied learning styles, non-traditional course access requirements, and non-traditional course pacing preferences. A high proportion (i.e., more than 50%) of this student population was

composed of mature students, many of whom had just recently returned to study after years of full-time employment. Unavoidably, they have different preferences and attitudes towards learning. Also, most of the mature students were still working either full time or part time; therefore, flexibility is an important consideration. This finding reinforces the pedagogical characteristics of blended learning as mentioned in existing literature, including the work of Graham (2006), and Yen and Lee (2011).

Student Experiences and Perceptions of Blended Learning

Notably, the student participants had had relatively little previous experience with blended learning, with only 17% of the respondents reporting they had had previous blended learning experience.

In terms of support for using blended learning, student respondents expressed the need to receive clearer guidance and a demonstration of how to use the online learning resources. This result is very much in line with what the literature says about the importance of skills training to facilitate the successful use of blended learning (Beadle & Santy, 2008; Harris et al., 2009).

Regarding the comparison of blended learning with face-to-face learning, the majority of student respondents (57%) commented that the quality of feedback from blended learning courses was no different from that for traditional classroom teaching. The only comment made about feedback was that, *"we would prefer face-to-face feedback as it is more effective and more personal,"* which reinforces the necessity for including face-to-face elements in blended learning approaches.

The majority of student respondents (more than 50%) did not see any difference in the amount and quality of interaction between students, or between students and lecturer, when comparing blended learning with face-to-face teaching. On the other hand, the majority of students (68% of respondents) commented that there was a relationship between online and in-class learning, and that these delivery methods enhance and are relevant to each other. Student respondents perceived blended learning as a method that allowed them to study at their own pace and time, and encouraged them to become more independent with regard to their own learning. They identified blended learning as a flexible learning method that gave them the convenience of studying off campus. This was also reflected in their comments on rating the advantages of blended learning in the questionnaire. The top three advantages of blended learning chosen by students pertained to:

- Flexibility of being able to complete assignments in any place/at any time;
- Convenience of not having to come to campus as often;
- Benefits of the online component when job responsibilities and other commitments make it difficult to attend face-to-face classes.

The students' perception of the flexibility of blended learning was further reinforced by their open comments on the most effective aspect of the use of blended learning. One of the student respondents commented that the most effective aspect of blended learning is *"the use of different teaching methods (online and face to face lectures) makes the delivery easier to understand, as a result, we are more engaged with our study,"* which summarizes the overall purpose of using blended learning as a delivery method.

On the other hand, the student respondents also identified one of the least effective aspects of blended learning, *"blended learning is making lectures redundant as all information is online"* and *"there is less interactive/lack of direct communications with lecturers."* One of the major concerns of using blended learning as a delivery method is the potential of reducing interaction between lecturers and students. This can be summarized in one of the students' suggestions for blended learning, which was *"blended learning is beneficial but it should still maintain the interaction and instant contacts with the lecturer."*

The UniSIM students had a different perception of blended learning compared to that in the literature. The UniSIM students perceived blended learning simply as an online learning delivery method. This was possibly because the lecturers did not define and explain "blended learning" to the students. Therefore, they did not necessarily realize they were being taught using a blended learning approach.

Discussion

Similarities and Differences between Students' and Lecturers' Views

The first common view shared by both students and lecturers of the study was that blended learning provides flexibility for students. Both groups found the use of a broad range of teaching methods assisted student learning. Students with different learning paces and styles benefited from using various learning methods in order to maximize their learning ability and potential. The lecturers and students shared the same views as Garrison and Kanuka (2004) and Owston et al. (2008), that is, blended learning encourages flexibility. They also expressed the view that blended learning was a favourable delivery method, particularly for part-time or distance learning courses with students studying off campus.

The major difference in view, between students and lecturers, was related to the placement of teaching materials on the Internet. Lecturers saw posting such materials online prior to lectures as being convenient for student study, but students felt this made lectures and learning redundant since all the information was already available online! Both students and lecturers also expressed that blended learning led to less interaction and there was a lack of direct communication between lecturers and students, as well as among the students themselves. The final concern, which was solely raised by students, had to do with the importance of training, with students commenting that it was important to have enough training in order for them to fully utilize blended E-learning context for learning. Blended learning enhances student learning experience by creating opportunities for them to improve their understanding through their own exploration and research of certain issues and topics (Sharpe et al., 2006). It encourages student-led learning and allows students to learn at their own pace. It gives greater flexibility of learning for students, which in turn, improves student learning experience and achievement. However, blended learning must not be seen purely as an economic measure for teaching. This view is supported by comments from the lecturer interviewees in this paper who emphasized the significance of investment for successful implementation of blended learning and one of the purposes of using ICT for blended learning is to aid student learning, not to use it to replace the valuable interaction between lecturers and students. This echoes O'Toole and Absalom's (2003) findings that

the use of ICT alone does not enhance student learning experience, and that only the appropriate use of ICT and interactive strategy will enhance student learning experience.

Blended learning cannot totally replace face-to-face contact with students, who require reassurance and ongoing support from lecturers. Students who responded to this survey voiced this opinion strongly. It was reflected in their comments that they prefer face-to-face interaction instead of online communications only, as they require the personal interactions with the tutors. The successful examples of blended learning ensure a good mix of delivery methods that are able to suit individual dispositions of the learners, such as part-time or off-campus students.

Although technology is important, the most important element for successful development of blended learning is an understanding of the learner preferred learning methods and the types of support they require, as evidenced in the interviewees' comments in the present study. It is crucial to take steps to respect and recognize students' "diverse talents and ways of learning," as advocated by the seventh of Chickering and Gamson's (1987) Seven Principles. Furthermore, the design of blended learning should demonstrate, via the online materials and activities, that the diverse talents and ways of learning are understood. It is also important to investigate how the delivery of blended learning at the module or unit level can support student learning across an entire program.

Conclusion and Recommendations for Blended E-learning in the 21st Century

This paper has reported on a study investigating the use of blended learning to enhance student learning experience, from an institutional perspective. The application of blended learning at UniSIM, together with success factors and the advantages of the development of blended learning were investigated in the study. Student' experience and perception of blended learning as a delivery method were also examined. Furthermore, the study looked at similarities and differences between the views of educators and students on blended learning.

The key advantage for students of using blended learning as a delivery method is that it provides flexibility of learning for students, which links back to another factor necessary for successful implementation, which is the suitability of the course. Blended learning works particularly well for courses that have a high proportion of part-time students, as flexibility is vital for them. The use of blended learning also addresses several of the educational principles introduced by Chickering and Gamson (1987), such as "encourage active learning," "give prompt feedback," and "respect diverse talents and ways of learning," which further reinforces the view that blended learning can enhance students' learning experiences. UniSIM students had had relatively limited experience of blended learning. However, they have accepted the delivery method well, which supports Sharpe et al.'s (2006) findings. Although UniSIM students do not see much difference between blended learning and face-to-face learning in terms of interaction between students and lecturers or among students, they stated clearly that they still want face-to-face interaction with the lecturers. The lecturers and students shared similar views on blended learning, both finding that its main advantage is flexibility. The main difference between their views centred around the issue of making

lecture materials available on the Internet. While the academics believed this practice provided convenience for their students, students perceived it as making lectures redundant. It is therefore important for lecturers to carefully consider when and how to release their materials online.

Based on the findings of this study, several recommendations can be made on the use of blended learning as a teaching method.

Recommendations

The recommendations are to design courses by focusing on: Interactions and Feedback between students and lecturers and students and students, Resources and the role of educators as a guide and facilitator (Ginns & Ellis (2007)). Strategies for effective online learning with:

- Supporting learner interactions
- Sharing and managing of resources
- Role of lecturers as a guide and facilitator

With reference to supporting learner interactions, students can download a course reading from Blackboard and discuss ideas using an online bulletin board to get feedback. Secondly, in sharing and managing of resources, the resources are sourced by students and are uploaded to a shared workspace using wireless technology and resources are shared within and across project teams. These strategies can support interactions and communications between students and lecturers and a better management of learning resources that help students with activities at a convenient time and place of learning online or offline. This is also discussed in the literature review of flexible nature of blended learning that reinforces the student's autonomy, reflection, and powers of research (Sharpe et al., 2006; Tam, 2000). Furthermore, with good management of resources, these can be subsequently revisited for editing and adjustment to suit the learning aims and objectives of the module accordingly.

For educators who intend to use blended learning in the future, it is suggested that the teaching style should be inclined towards student-centred and to play the role of a guide and facilitator but he/she must be prepared to be experimental. Different modules and courses require different forms of blended learning to suit the course, the content, and the students' needs; therefore, having a flexible approach as a facilitator is important. The educator must also attempt to understand how students access and use materials and resources in order to design a blended learning module that matches students' preferences and expectations in guiding and facilitating students' learning in a student-centred learning approach. The findings from Ginns and Ellis (2007) study indicate academics in blended learning contexts need to focus not only on the technical capacities and functions of online materials and activities, but must also seek to understand their students' perceptions of the blended learning environment, and identify how successfully it supports students' learning across the whole course. The other important aspect for developing blended learning that emerged from the present study was the importance of not making assumptions; an approach that works for one module may not work for another. Students in different disciplines may have dissimilar preferred learning styles in different modules, so they may require different teaching

and learning methods. It is also important to provide sufficient training for the students and for educators who are new to blended learning and teaching.

Recommendations for good blended E-learning practices also include:

Based on the findings and the discussion of this paper, the following are some good E-learning practices for a blended learning context.

- **Implementing chat groups at a fixed time** – Allow for interactivity, sharing and discussing of information and queries, between students and facilitators, synchronously for example via Skype or online audio/visual conference sessions
- **Incorporate the use of social media** - Use of Facebook for short interactions, postings and sharing of topics and model examination topics for discussion and revision purposes and the use of YouTube for aided visual guide and to showcase good videos posted and uploaded by students during their presentations. Blogs for teaching and sharing and for review of students' writings
- **Complementary face-to-face with online learning** – Continuation of both online and in-class discussion with links, podcasts and video recordings as well as an online discussion forum
- **Team play** Have activities that are team-based in the form of contest for teachers and their students; teams use assessments and exams to earn points, competing for prizes and worldwide recognition

Based on the findings of this paper, the following are some recommendations for the University that intends to implement blended learning context. The first suggestion is that the institution must be realistic about the investment of time, effort, and resources that are required for development and implementation. Institutions must create the necessary policy, planning, resources, scheduling, and support systems to ensure that blended learning initiatives are successful. The resources required are not restricted solely to the acquisition of equipment and technology, but also refer to the human resources used in developing and managing the implementation of blended learning. It is also important to provide technology training and support for the students as well as professional development for the academics who will be using blended learning. The development program should teach educators how to redesign their courses, the most effective way to deliver their courses online, and also the effective use of technology.

The major limitation of this study is that the research findings are based on the practice in a single institution, although they do cover a range of disciplines. A suggested future research area is to adopt the research methodology developed in this project to conduct research in several universities to obtain a broader picture of the use of blended learning in the sector. Another proposed research area is to conduct an extensive study on the use of blended learning in particular subject disciplines.

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Appendix: Student Questionnaire

Background Information

1. Year of study
 - First year
 - Second year
 - Third year
 - Fourth year
 - Postgraduate
2. Student status
 - Full time
 - Part time
3. Age group
 - 18-24
 - 25-35
 - Over 35

Section 1: Experience of Using Blended Learning

1. Do you have knowledge or experience of using blended learning prior to attending this course/module?
 - Yes – *If Yes, please provide more details:*
 - No
2. Do you think you have sufficient training and guidance in the use of blended learning methods?
 - Yes
 - No – *If No, please state what type of training you would like to have:*
3. Blended learning teaching method is sufficiently explained in a module handbook.
 - Strongly agree
 - Agree
 - Not sure
 - Disagree
 - Strongly disagree
 - Not applicable
4. A module handbook provides sufficient resources for this specific blended learning module.
 - Strongly agree
 - Agree
 - Not sure
 - Disagree
 - Strongly disagree
 - Not applicable

Section 2: Overall Satisfaction with Blended Learning

1. Given the opportunity, I would take another blended learning module in the future.
 - Strongly agree

- Agree
 - Not sure
 - Disagree
 - Strongly disagree
 - Not applicable
2. Overall, I am satisfied with the use of blended learning as a teaching method.
- Strongly agree
 - Agree
 - Not sure
 - Disagree
 - Strongly disagree
 - Not applicable

Section 3: Comments on Blended Learning

1. In your opinion, what are the advantages of using blended learning as a teaching method? (Please identify up to THREE advantages.)
- Convenience of not having to come to campus as often
 - Flexibility of being able to complete assignments any place/any time
 - It is a requirement for course/module
 - It was the only available option course that fitted into my timetable
 - Job responsibilities and other commitments make it difficult to attend face-to-face classes
 - I have a disability that makes travel inconvenient
 - Other – *Please specify:*
2. What was the MOST effective aspect of the use of blended learning as a teaching method?
3. What was the LEAST effective aspect of the use of blended learning as a teaching method?
4. What suggestions can you provide to help strengthen this blended learning module?

Section 4: Comparison of Blended Learning to Face-to-Face Learning

1. In comparison to the traditional classroom teaching, how would you describe the QUALITY OF FEEDBACK on coursework assessment that is received if the module is taught by blended learning?
- Increased
 - Somewhat increased
 - No difference
 - Somewhat decreased
 - Decreased
 - Not applicable

2. In comparison to the interaction experienced with STUDENTS in other modules that do not use blended learning, how would you describe the AMOUNT of interaction experienced with other students?
 - Increased
 - Somewhat increased
 - No difference
 - Somewhat decreased
 - Decreased
 - Not applicable
3. In comparison to the interaction experienced with LECTURERS/TUTORS in other modules that do not use blended learning, how would you describe the AMOUNT of interaction experienced with the lecturer(s)/tutor(s) in this module?
 - Increased
 - Somewhat increased
 - No difference
 - Somewhat decreased
 - Decreased
 - Not applicable
4. In comparison to the interaction experienced with STUDENTS in other modules, how would you describe the QUALITY of interaction experienced with other students in this module?
 - Increased
 - Somewhat increased
 - No difference
 - Somewhat decreased
 - Decreased
 - Not applicable
5. In comparison to the interaction experienced with LECTURERS/TUTORS in other modules, how would you describe the QUALITY of interaction experienced with the lecturer(s)/tutor(s) in this module?
 - Increased
 - Somewhat increased
 - No difference
 - Somewhat decreased
 - Decreased
 - Not applicable
6. How would you describe the relationship between the online learning and in-class learning?
 - Online and in-class work enhanced each other
 - Online and in-class work were relevant to each other
 - The connection between the two was not always clear
 - There was no connection between the two