Implementation of Blended Learning in Higher Learning Institutions: A Review of the Literature

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Abstract

While many educational premises including higher learning institutions favor blended learning over traditional approach and merely online learning, some academicians are still apprehensive about teaching in blended learning. The aim of this review is to synthesize the available evidence in the literature on challenges faced in implementing blended learning as well as the recommendations or lessons learnt from the experience. Eight articles published between January 2010 and December 2013 were appraised. This review revealed that among the challenges faced by the instructors are increased workload and time devotion, lack of pedagogical and technical skills to conduct the program and difficulty in finding the right blend between face-to-face and online learning. The review also discovered the importance of staff training, support and networking as strategies to help instructors deal with such issues.

Keywords: blended learning, higher learning institutions, literature review

1. Introduction

Education and learning is a dynamic field. In previous decades, it has always been associated with the physical presence of schools, classrooms, examination halls, teachers, textbooks and examinations (Eddy, Nor-Aziah, & Jasmine, 2014, p. 20). However, in this era, innovations in technology has resulted in new trends of learning environments and introduced more modern conceptions of learning. From traditional face-to-face learning, technology has transformed our education positively and brought us to the concept of e-learning (i.e. digitally delivered learning). When first introduced, e-learning and Web-based programs focus on delivering the instructional content of physical classroom over the Internet (Silverwood, 2006 as cited in Mohamed-Amin, Norazah, & Ebrahim, 2014). However, learners are challenged with long sequences of 'page-turner' content along with point-and-click quizzes (Mohamed Amin et al., 2014). At this point, a single mode of delivery seems unable to offer sufficient engagement, choices, relevance, social contact and context to facilitate effective and successful learning (Mohamed-Amin et al., 2014). One of the innovative solutions for this issue is the introduction of blended learning mode in which various types of delivery modes are combined (Allen, Seaman, & Garrett, 2007).

Past studies have shown how blended learning slowly gain its significance in education world. According to Rooney (2003), blended learning has been identified by the American Society for Training and Development (ASTD) as one of the top ten trends to emerge in the knowledge delivery industry. Allen and Seaman (2006) further reported that blended learning is now emerging as a major global trend in educational context. In this globalization era, students are no longer learning the same way as before (Young, 2002), thus traditional approach to learning is no longer ideal for all students (Alebaikan & Troudi, 2010). Blended learning is seen as a better approach as it conceptualizes learning as a continuous process rather than single time event and encourages students to be independent learners outside the classroom (Johan Eddy et al., 2014). With its attempt to overcome some limitations that are experienced in the conventional classroom environment (Wakefield, Carlisle, Hall, & Attree, 2009), blended learning has yielded many positive outcomes. Studies have overwhelmingly shown that blended learning has not only improved pedagogy, access and flexibility but also learner engagement and participation (Alebaikan & Troudi, 2010; Gomez & Igado, 2008; Graham, 2007; Garrison & Kanuka, 2004). As point out by Singh and Reed (2001, p. 6), "these researches give us confidence that blending not only offer us the ability to be more efficient in delivering learning, but also more effective".

Recognizing the strengths that blended learning holds, many educational settings, including higher learning institutions have changed their delivery method to blended programs (Godambe, Picciano, Schroeder, & Schweber, 2004). Blended learning is becoming a newly emerging trend in higher education as it combines the best of synchronous and asynchronous learning approaches to meet specific educational goals (Levin, Whitsett, & Wood, 2013). However, despite the benefits of blended learning to students, studies have shown that academicians are apprehensive about teaching in blended learning (Brooks, 2008). The are some challenges facing those wanting to introduce blended solutions, especially in terms of dealing with its relative complexity (The Oxford Group, 2013).

This article aims to review the experiences of several Higher Learning Institutions (HLIs) in implementating blended learning. In this review, the following research questions are addressed: (1) what are the issues and challenges in implementing blended learning? And (2) what are the solutions or recommendations to deal with the challenges?

2. Blended Learning

Different scholars have different interpretations of blended learning. Garrison and Vaughan (2008) for example, defined blended learning as a student-centred, self-paced, flexible and multi-modal approach to learning but argue that merely supplementing a face-to-face mode with online Web-based learning is not considered as blended learning. On the other hand, Littlejohn and Pegler (2007) present the concept of 'strong' and 'weak' blends in order to show a continuum across very small amounts of e-Learning to significant amount of e-Learning. These variations are small evidences that blended learning lacked a single definitive definition (Picciano, 2009). As points out by Picciano and Dziuban (2007, p. 11) "there are many forms of blended...[but] a generally accepted taxonomy does not exist. One school's blended is another school's hybrid, or another school's mixed-mode". However, despite the many designations of blended learning, the most common definitions refer to a combination of physical classroom learning and virtual environment (Garnham & Kaleta, 2002; Kim, Bonk, & Oh, 2008; Mohamed-Amin et al., 2014). Thus, blended learning could be defined as a teaching and learning approach that integrates Web-based teaching and learning mode and face-to-face interaction.

Studies have shown that blended learning, regardless its implementation design, has shown a considerable positive effect on the teaching and learning process (Alebaikan & Troudi, 2010). Not only had the students learned more when online sessions were added to traditional courses, student interaction and participation also improved (DeLacey & Leonard, 2002; Alebaikan & Troudi, 2010; Korr, Derwin, Greene, & Sokoloff, 2012). Apart from that, blended learning also provided flexibility to students and enhance feedback time (Sharpe, Benfield, Roberts & Francis, 2006; Gomez & Igado, 2008; Alebaikan & Troudi, 2010; Korr et al., 2012). The many benefits of blended learning have caught the attention of many curriculum implementers to adopt such delivery mode for their institutions.

Despite the overwhelming support in literature for widespread acceptance of blended learning, academics are still challenged with finding the most effective ways to implement blended solutions. According to the Oxford Group (2013), the time and complexity of designing and developing a blend as well as lack of internal expertise are cited as key challenges, in implementing blended learning. Other factors include technology, the instructor, technical support (Lionarakis & Parademetriou, 2003) and student engagement (Oliver & Herrington, 2003). Nonetheless, regardless how blended learning is used, there are some clear success factors which need to be in place. It includes a structured process for designing an effective blend, being rigorous in needs analysis, involving people with appropriate skills, and bearing in the mind the organisation's constraints (The Oxford Group, 2013).

3. Methodology

An entensive search in the databases EBSCO Academic Search Primier, JSTOR and ScienceDirect and for articles published between January 2010 and December 2013 on blended learning in higher learning institutions was conducted. The following keywords were used: 'blended learning', 'higher learning institution', 'challenges' and 'barriers'. Titles and abstracts were screened, and studies were included if they met the following criteria: (1) addressed blended learning in higher learning institutions, (2) discussed institutions' experience in terms of challenges encountered and lesson learnt from the experience, and (3) published in English. A final number of 8 articles were decided to be included in this review. The information from the articles were extracted and coded as themes.

4. Data Abstraction and Synthesis

Table 1. Studies included in the literature review

Source	Country	Challenges of Blended Learning (BL)	Solutions/Recommendations
Alebaikan & Troudi (2010)	Saudi Arabia	**Institutions:** • Adaptation of BL in the traditional university culture *(Theme: Culture)* **Instructors:** • Finding the right design: a daunting task, lack of instructional design framework to be used, insufficient knowledge *(Theme: Finding the right blend)* • Increased workload: BL requires more time in redesigning the course, learning new techniques and skills, and on interacting with students *(Theme: Workload)* • Lack of technological skills *(Theme: Skills)* **Students:** • Participation: BL require high level of student discipline and responsiveness *(Theme: Participation)* • Lack of technological skills (*Theme:Skills)* **Technological aspects:** • Limited bandwidth access *(Theme: Internet access)*	**Institutions:** • Giving support to faculty in making use of the latest technology and instructional techniques *(Theme: Support)* **Instructors:** • Be given orientation and training programmes *(Theme: Training)* • Be given necessary development programmes to improve the skills of the university staff *(Theme: Training)* **Students:** • Be given extensive tutorials, support services and a helpdesk *(Theme: Support)*
Kenney & Newcombe (2010)	USA	**Instructors:** • Finding time for professional and course development *(Theme: Time)* • Getting students familiar with the new format *(Theme: Workload)*	**Instructors:** • Be given support from institutions *(Theme: Support)* • Be given training and orientation prior to implementation *(Theme: Training)*

Students:

- Attitude: being skeptical about the new approach
  (Theme: Attitude)

  - Participation: issues with time management and holding responsibility for own learning
    (Theme: Participation)

- Lack of technological skills
  (Theme: Skills)

- Collaboration with other faculty members
  (Theme: Networking)

- Be given a graduate student assistant
  (Theme: Support)

Students:

- Be given technical and learning support
  (Theme: Support)

| Ramos, Taju, & Canuto (2011) | Cape Verde & Mozambique | **Institutions:**

- Establishing common knowledge, skills, and understandings regarding new administrative, teaching, instructional design etc. *(Theme: Culture)*

- Ensuring the necessary technology and infrastructure were in place *(Theme: Technology)*

- Changing the mindsets and practices of the teaching staff *(Theme: Culture)*

Instructors:

- Reluctant to rethink and rework their practices to meet students' needs *(Theme: Attitude)*

- Lack of willingness to be trained or counselled *(Theme: Attitude)*

Technological aspects:

- Issues of access, cost and logistics limited the potential for use of the computers in regular online learning *(Theme: Internet access, Cost)* | **Institutions:**

- Deploying full national Internet coverage, and improving national and international access rate *(Theme: Technology)*

- Creating Mozambique Research and Education Network (MoRENet) *(Theme: Research)*

  - Analysing the circumstances and contexts of students, teachers, support staff, institutions and technology provision and access *(Theme: Analysis)*

Instructors:

- Be given training to re-orientate the attitudes and practices *(Theme: Training)*

Technological aspects:

- Setting support network team to provide pedagogical and technical support for the students *(Theme: Support)* |
| Heaney & Walker | UK (Open University) | **Instructors:**

- Ensuring that the module is | **Instructors:**

- Identifying problematic students |

| (2012) | | error-free and the materials produced are relevant for a long period of time *(Theme: Module development)*

• Increased workload: managing online forums, tutorials and also providing one-to-one support to students when needed *(Theme: Workload)*

Students:

• Engagement and participation: distance learning requires certain degree of self-discipline *(Theme: Participation)*

Technological aspects:

• Internet connection fault, inability to see students' body language in online environment *(Theme: Internet access)* | and providing additional support to assist them *(Theme: Support)*

• Be given training in pedagogical and technical aspects of the program *(Theme: Training)*

• Be encouraged to communicate and share ideas with each others *(Theme: Networking)* |
| Korr, Derwin, Greene & Sokoloff (2012) | USA (Brandman University) | **Institution:**

• No specific policy of how blended courses would actually run *(Theme: Policy)*

Instructors:

• Defining blended learning: finding the right balance *(Theme: Finding the right blend)*

• Restructuring the curriculum: rewriting the syllabus, redeveloping course learning objectives and assignments *(Theme:Curriculum development)*

• Increased workload: preparing and evaluating students' work online *(Theme: Workload)*

• Lack of interaction among instructors | **Institution:**

• Considering a development and implementation plan longer and broader prior to implementation: minimizing stress on faculty members *(Theme: Planning)*

• Selecting a model of blended learning that is most appropriate for the institution *(Theme: Blended learning model)*

Instructors:

• Be given training in blended learning theory, pedagody & basic Blackboard skills *(Theme: Training)* |

		(Theme: Networking)	
Levin, Whitsett, & Wood (2013)	USA (University of Southern California)	**Instructors:** • Redesigning classroom activities to accommodate the virtual platform *(Theme: Module development)* **Students:** • Decorum: inappropriate dressing and setting when present in virtual environment *(Theme: Etiquette)* • Experienced mental health issues *(Theme: Health)* **Technological aspects:** • Internet connections: some situations like poor weather could compromise the Internet connections *(Theme: Internet access)*	**Institution:** • Considering a blended learning model that is appropriate for the institution *(Theme: Blended learning model)* • Setting up a learning management system that supports the faculty's choice of the placement of learning activities *(Theme: Technology)* **Instructors:** • Preparing and designing classroom activities to accommodate the virtual platform *(Theme: Planning)* **Students:** • Be given notification and reminder about norms for behaviour in classroom, on virtual bulletin board and during orientation *(Theme: Policy)* • Be referred to students' local social service agencies or mental health counsellor *(Theme: Support)* **Technological aspects:** • Setting up technology support group to deal with technological glitches *(Theme: Support)*
Gedik, Kiraz, & Ozden (2013)	Turkey (Akdeniz University)	**Institution:** • Lack of support concerning logistics including technical support and management of the learning environment	**Institution:** • Analysing of institutional deliverables and support mechanism prior designing a blended course

		(Theme: Support)	*(Theme: Analysis)*
		Instructors: • Finding the right blend: deciding how much time to spend in online and face-to-face discussions etc. *(Theme: Finding the right blend)* • Increased time devotion: regular preparation time doubled in the online environment *(Theme: Time)* • Increased workload: deal with students' posts and technical maintenance of the system, uploading documents and forum posts etc. *(Theme: Workload)* • Lack of competency: creating harmony between the two environments *(Theme: Skills)*	**Instructors**: • Be given help from teaching assistants, or a technical support team *(Theme: Support)* • Be given training in learning and teaching in BL environment *(Theme: Training)* • Working collaboratively with colleagues while offering blended course *(Theme: Networking)*
Lotrecchiano, McDonald, Lyons, Long, & Zajicek-Farber (2013)	USA (George Washington University)	**Instructors:** • Increased time management: online discussions are more time-consuming than time-bound classroom discussions, in familiarizing themselves with site navigations and operations *(Theme: Time)* • Coordinating face-to-face learning and online sessions *(Theme: Skills)* **Students**: • Increased time devotion to participate in the discussion on a regular basis, difficulties in organizing their virtual and real-time agendas *(Theme: Time)* • Participation: heterogeneous group of professional with different	**Instructors:** • Modelling the appropriate postings early in the course to encourage learner adoption of expected practices *(Theme: Modelling)* • Be trained on effective online practices to ensure effective facilitation of online learning environment *(Theme: Training)* • Be given support to monitor access and security clearances to the course *(Theme: Support)* **Students:** • Be given advice on time-management skills and technological skills *(Theme: Support)*

learning   needs

(Theme: Participation)

5. Findings

This review included 8 publications (Table 1). The studies were conducted in five different countries: United States (n = 4), Saudi Arabia, United Kingdom, Mozambique and Turkey (n = 1, for each country). The challenges in implementing blended learning and the recommendations extracted from the studies are summarized in Table 1.

5.1 Issues and Challenges in Implementing Blended Learning

Based on the data gathered from the publications, it can be said that the issues and challenges in implementing blended learning could be divided into four categories; namely institutions, instructors, students and technological aspects. For the institutions, there are four issues identified from the literature namely culture, policy, technology and support. However, the most prominent challenge comes from the institutional culture itself (Alebaikan & Troudi, 2010, Ramos et al., 2011). Alebaikan and Troudi (2010) for instance reported that it is challenging for Saudi universities to get students to adapt to the use of new learning strategies as they are so used to the traditional didactic, lecture-based classroom. Ramos and colleagues (2011) further added that it is difficult to change the mindsets and practices of the teaching staff that are so used to the traditional method.

The instructors however have to deal with several other issues like increased workload, increased time devotion, lack of skills to conduct blended learning and difficulty in finding the right blend for their curriculum. Based on the data, it appears that workload being the most frequently reported issue among the instructors (Alebaikan & Troudi, 2010; Kenney & Newcombe, 2010; Heaney & Walker, 2012; Korr et al., 2012; Gedik et al., 2013). The instructors generally find that blended learning placed a burden on them both physically and cognitively. They have to spend more time in few tasks such as redesigning the module, preparing for the materials to be uploaded, dealing with students' posts and evaluating students' work online. They found this as requiring a high level-of-effort and thus pose a challenge to them. This eventually relates to the issue of time which is also another issue raised in implementing blended learning (Kenney & newcombe, 2010; Gedik et al., 2013; Lotrecchiano et al., 2013).

Furthermore, instructors lack of pedagogical and technological skills is also a source of problem for them (Alebaikan & Troudi, 2010; Gedik et al., 2013, Lotrecchiano et al., 2013.). The data revealed that some instructors who aim to implement blended courses lack specific instructional design framework to be used for the curricula (Alebaikan & Troudi, 2010). They also lack in competency to create a harmony between the two environments; face-to-face and online (Gedik et al., 2013; Lotrecchiano et al., 2013). Such constraints create problems for them in ensuring learning effectiveness.

Another challenge faced by instructors is in deciding the right blend; as in how much time should be allocated for classroom meetings and virtual learning respectively (Alebaikan & Troudi, 2010; Korr et al., 2012; Gedik et al., 2012). They consider this as a daunting task since they have to critically find the balance between the two environments. Alebaikan and Troudi (2010) in their study mentioned about lack of instructional design framework to be used as guide and instructors' insufficient knowledge as the contributing factors for this problem.

As for the students, the issue of participation becomes the most outstanding barrier for the implementors of blended learning. While blended learning is supposed to improve student participation in learning, several studies reported that this aspect had been an issue in blended learning implementation (Alebaikan & Troudi, 2010; Kenney & Newcombe, 2010; Heaney & Walker, 2012; Lotrecchiano et al., 2013). Some students are reported unable to meet the demands of blended learning which require high level of student discipline and responsiveness (Alebaikan & Troudi, 2010; Heaney & Walker, 2012). Besides, poor time management (Kenney & Newcombe, 2010) and students' heterogenous backgrounds (Lotrecchiano et al., 2013) also affect student participation in blended learning.

In terms of technological aspects, it is observed that internet connection fault has posed the greatest challenge for blended learning implementors (Alebaikan & Troudi, 2010; Ramos et al., 2011; Heaney & Walker, 2012; Levin et al., 2013). Issues like poor wheather (Levin et al., 2013), limited bandwitdh access (Alebaikan & Troudi, 2010) and inability to view students' body language in online environment (Heaney & Walker, 2012) are among the restrictions that comes with technology. This issue has become one of the barriers in blended learning

implementation.

5.2 Solutions or Recommendations to Deal with the Challenges

In order to deal with the issues and challenges identified in implementing blended learning, the studies have offered several solutions or recommendations for better adoption of blended learning. At institution level for example, it is suggested that a proper needs analysis is to be conducted prior to designing and implementing blended solutions (Ramos et al., 2011; Gedik et al., 2013). This refers to analysing the institutional deliverables and support mechanism (Gedik et al., 2013) including circumstances and contexts of students, teachers, support staff, technology provision and access (Ramos et al., 2011). In addition, it is also recommended that a selection of blended learning model is carefully done (Korr et al., 2012; Levin at al., 2013). This is to ensure that the model and design chosen is the most appropriate for the institution.

Morever, for the instructors to deal with the aforementioned challenges, there are three major recommendations that were extracted from the studies. First is the importance of staff training (Alebaikan & Troudi, 2010; Kenney & Newcombe, 2010; Ramos et al., 2011, Heaney & Walker, 2012, Korr et al., 2012; Lotrecchiano et al., 2013). Staff training here refers to the provision of orientation prior to implementation and continuous development programmes in pedagogical and technological aspects of blended learning. This is vital in ensuring effective delivery and also in re-orientating instructors' attitudes and practices (Ramos et al., 2011). Second is the importance of support (Kenney & Newcombe, 2010; Heaney & Walker, 2012; Gedik et al., 2013; Lotrecchiano et al., 2013). For the instructors, the support needed could come from various sources such as teaching assistants (Kenney & Newcombe, 2010; Gedik et al., 2013), technical support (Gedik et al., 2013), and from the institution itself (Heaney & Walker, 2012; Lotrecchiano et al., 2013). This could possibly reduce their burden especially in terms of time devotion and workload in blended learning program. Lastly is the importance of networking among the instuctors (Kenney & Newcombe, 2010; Heaney & Walker, 2012; Gedik et al., 2013). Instructors are encouraged to communicate with their colleagues, share ideas with each other and working collaboratively for effective blended learning implementation.

While support is important for instructors to deal with challenges in blended learning, this factor is also important for students (Alebaikan & Troudi, 2010; Kenney & Newcombe, 2010; Levin et al., 2013; Lotrecchiano et al., 2013) and for technological aspects (Ramos et al., 2011; Levin et al., 2013) as well. For students, the support could be provided in terms of technical aspects such as a helpdesk (Alebaikan & Troudi, 2010; Kenney & Newcombe, 2010), mental and health aspects such as counseling services (Levin et al., 2013) and also personal development like management skills (Lotrecchiano et al., 2013). In addition, to deal with technological glitches, the establishment of technical support team is highly recommended for effective and smooth delivery of blended learning (Ramos et al., 2011; Levin et al., 2013).

6. Discussion

This review describes the challenges encountered in implementing blended learning and recommendations for better adoption based on previous experiences. One of the challenges identified is student participation (Alebaikan & Troudi, 2010; Kenney & Newcombe, 2010; Heaney & Walker, 2012; Lotrecchiano et al., 2013). This is consistent with previous review which highlighted the issues of students' participation, familiarity with technology and self-discipline as barriers in blended learning (Sait, Al Tawil, Ali & Khan, 2003). In addition, this review also revealed that increased time devotion (Kenney & Newcombe, 2010; Gedik et al., 2013; Lotrecchiano et al., 2013) and instructors limited skills (Alebaikan & Troudi, 2010; Gedik et al., 2013; Lotrecchiano et al., 2013) as the sources of problems in blended learning. Similarly, other review also reported the issue of time and lack of pedagogical and technological skills as the key challenges in blended learning implementation (The Oxford Group, 2013). Instructors' limited skills and competency in technology has not only influenced their delivery approach, but also affected their willingness to adopt blended learning (Sait et al., 2003). This is one of the issues that should be taken into consideration in planning a blended program.

Despite the many challenges encountered in implementing blended learning, the review also summarizes some recommendations offered by the studies. It includes a thorough needs analysis prior designing a blended learning programme (Ramos et al., 2011; Gedik et al., 2013), and providing staff with training to equip them with necessary knowledge and skills to conduct blended learning (Alebaikan & Troudi, 2010; Kenney & Newcombe, 2010; Ramos et al., 2011, Heaney & Walker, 2012, Korr et al., 2012; Lotrecchiano et al., 2013). This is consistent with the review by The Oxford Group (2013) which highlighted these four success factors for blended learning namely; a structured process for design which produces a cohesive whole, being rigorous in needs analysis and involving stakeholder, involving people with appropriate skills, and bearing in mind the organisation's constraints. Should these aspects be given emphasis in designing and developing blended learning

program, there seems to be a higher tendency for the particular institution to minimize challenges and thus lead to successful implementation of blended learning.

7. Implications and Conclusion

Based on the experiences shared by many institutions in implementing blended learning, it is learned that there are several core aspects that have to be taken into consideration in developing and implementing blended learning. The following are some key points for successful blended learning implementation summarized   from the studies:

1)   Conduct a proper needs analysis concerning the institution deliverables and support mechanism   prior designing a blended course

2)   Carefully select a blended learning model that is most suitable for the institution

3)   Provide continuous training for faculty staff including instructors and administrative staff on necessary skills needed to conduct the program and to continuously enhance the effectiveness of delivery

4)   Encourage instructors to work collaboratively with each other by setting up a networking system for them to share ideas and/or best practices

5)   Create a support system for instructors, students and also for dealing with technological fault in order to promote smooth delivery of the program

Although the included studies on blended learning focused on higher learning institutions, other educational premises could also benefit from this review. Despite the fact that some issues are unavoidable, others' past experience could be used to facilitate us in planning intervention measures. This would be a good start for optimizing the great potential blended learning has in promoting learning.

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