BLENDED LEARNING IN HIGHER EDUCATION: A CRITICAL REVIEW

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ABSTRACT
Advancements in technology has brought both opportunities and challenges to education and training. With technological innovations over the year's reliance on the traditional face-to-face learning is being shifted on to other various means to support knowledge delivery and fostering an innovative learning environment. Instructional approaches such as Blended learning, which can combine face-to-face instruction with computer mediated instruction, has substituted a large portion of the traditional face-to-face instructional time. This paper aims to examine, and review of previous studies carried out based on the perceptions of students in blended learning environments and its effectiveness in enhancing the learning process. Desk Research technique was conducted for this study which basically involving collecting data from the existing online library. The main purpose of using desk research is to generate new insights from the previous studies. Reanalysing the previous literature may lead to unexpected new discoveries. Several case studies have been explored here which suggests blended learning has had positive impacts on improving student's exam marks, attendance rate among others but, there is a need to consider that being fully dependent on it may result in reverse effects. As in contrast to this, studies also reveal that not everyone might be able to cope with the blended learning and might prefer a more traditional learning environment. And thus, it is necessary for higher educational institutions to pay obvious attention to the students' individual learning needs and their views on blended learning. Higher Educational Institution may consider offering students a choice of whether to enrol in blended or fully face-to-face course sections where suitable. Educators should carefully design courses in ways with multiple means of expression and engagement, representation, to scaffold and support students in the creation of their own individualised blend. High degree of motivation, utility and satisfaction perceived from blended learning, which results in students to have a positive attitude towards learning.
Keywords: Blended learning, Learning styles, E-learning, Learning Management System, Higher Education

1. INTRODUCTION

The widespread use of the Internet has resulted in higher education institutions around the world going through rapid changes as they adapt to the new realities of the knowledge society (Macfadyen and Dawson, 2010) and hence, it is necessary for them to comply with the growing expectations to help students strive effectively in the technology based world. Higher education institutions (HEIs) Advancements in technology has brought both opportunities and challenges to education and training, particularly through online instruction and created new terminologies such as online learning, e-learning or web-based learning specifically (Akkoyunlu & Soylu, 2008; Güzer & Caner, 2014). Instructional approaches such as Blended learning, which can combine face-to-face instruction with computer mediated instruction, has substituted a large portion of the traditional face-to-face instructional time (Owston, York & Murtha, 2013). Hence, computer-mediated instruction is often credited to encourage students' creative, analytical and critical thinking skills, creating social interaction and good relationships between writer and reader and supporting the learning community (Gyamfi & Gyaase, 2015). Blended learning provides learners with the opportunity to interact at anytime and anywhere as a result of the perks that computer-mediated educational tools have to offer and this contributes to greater quality and quantity of socially supported, constructive, learning experience. Many researches have been undertaken in relation to blended learning, their dimensions and variables and their impact, with the most important debates to whether students can truly learn better in a blended learning environment compared to traditional face-to-face classroom environment (Güzer & Caner, 2014).

2. LITERATURE – A CRITICAL REVIEW

2.1 Blended learning: what and why?

Blended learning is a familiar term now and practice in the higher education and there has been many definitions put forward in the literature. Over the years, factors such as twenty first century skills, information explosion and demands of workplaces has strengthened and encouraged moves to adopt technologies into classrooms and learning settings. The rapid growth in the use of learning technologies has led to a growing need to explore efficient program delivery methodologies and provided teachers and students with many more opportunities to mix of teaching and learning styles for a given task (Uğur, Akkoyunlu & Kurbanoğlu, 2009).

In the same context, Thorne (2003) defines blended learning as "a way of meeting the challenges of customizing learning and development to the needs of individuals by incorporating the innovative and technological advances offered by online learning with the interaction and participation offered in the best of traditional learning". Thorne (2003) states that blended learning is the most logical and natural evolution of our learning agenda and does indeed provide a real opportunity to create learning experiences that can deliver the "right learning at the right time and in the right place for each and every individual", not only from an academic perspective but also from the workplace and home. Akyüz & Samsa (2009) states that blended learning has often been referred to as the "third generation" and characterized as maximizing the best advantages of face-to-face learning and a variety of technologies to deliver learning through combinations of learning delivery methods, such as face-to-face instruction with either synchronously or asynchronously computer technologies.

Singh (2003) proposed that "blended learning focuses on optimizing the achievement of learning objectives by applying the "right" personal learning technologies to watch the "right" personal learning style to transfer the "right" skills to the "right" person at the "right" time. Blended learning has been discovered to be a feasible and effective approach to deliver up-to-date, high-quality, on-demand learning solutions that combines various delivery methods, such as collaboration software, Web-based courses, EPSS, and knowledge management practices (Thorne, 2003; Bansal, 2014).

Bansal (2014) also enunciates blended learning to describe learning that combines various event-based activities such as face-to-face classrooms, self-paced instruction and live e-learning, which has resulted in the creation of new opportunities for students and learners alike to interact with their academic content both inside and outside the classroom, peers and faculty. Olitsky & Cosgrove (2014) state that blended learning should be regarded as a pedagogical approach that integrates the effectiveness and socialization opportunities of the technologically enhanced active learning possibilities of the online environment with the class room. Therefore, Blended learning should be approached as redesign of the instructional model with the following characteristics below:

i) First, a shift from lecture to student-cantered instruction, where students become active and interactive learners even during the face-to-face sessions
ii) Second, an increase in the interaction between student-content, student-instructor, student-student and student-outside resources.
iii) And lastly, an integrated summative and formative mechanisms for students and instructors (Olitsky & Cosgrove, 2014).

Studies revealed that students believed they received instructor feedback, their grades faster and the rated the quality of teaching assistants significantly better in blended courses in comparison with traditional face-to-face learning environment (Korr, Derwin, Greene, & Sokoloff, 2012). Given the flexibility in managing their blended courses, students are able to balance their study to achieve their educational goals, around the multiple commitments they face with in their daily lives such as juggling work with family obligations, commuting and financial challenges (Lin & Wang, 2012). It has reported that students appreciate the opportunity to be able to regulate their own study, such as work with course materials and participate in online discussions (Lin & Wang, 2012; Poon, 2012). As blended learning combines a mixture of face-to-face and online learning environments, students can benefit from increased time and spatial flexibility for their study, wider and easier access to learning resources, and a higher level of autonomy in regulating their learning (Poon, 2012).

Osguthorpe and Graham (2003) asserts that different student learning styles and learning experiences, the context of online resources and the experience of trainers play an important role in designing an efficient blended learning environment and to establish the balance between face to face and e – learning environment. They suggest a framework that is a particularly useful in illustrating the application of a systemic approach in determining what is blended learning and the goals of blending. They, recognizing three types of mixture in a blended course that is beyond the simple combination of face-to-face and online instruction, which are as following: (a) learning activities, (b) students, and (c) instructors. Also, they further suggest that blended learning environments may vary widely according to the following goals: pedagogical richness, social interaction, access to knowledge, personal agency, the ease of revision and cost effectiveness.

Blended learning inherently is about rethinking and redesigning the teaching and learning relationship'. However, previous studies have also shown that blended learning solutions often do not live up to the potential of the approach or could result in failure to produce the expected results because instructors, administrators and learners could lack the relevant technical, methodological or organisational knowledge and experience (Bansal, 2014). And hence, benefits of blended learning do not come without costs. Documented costs have surfaced such as students' struggle with time management and responsibility for their own learning, difficulty in using new technology, inadequate professional development support and difficulties in establishing a supportive

culture for blended learning (Vaughan, 2007). The major stance here is designing a learning environment that ensures effective, efficient and flexible learning for all learners/students and thus, their views are essentially crucial in order to assess the efficiency and effectiveness of a learning environment. No single technology-mediated instruction is best for all learners which is why when planning the use of learning media to present the information they receive and process, the specific preferences and strengths of the learners should be considered.

2.2 Blended learning through LMS

As various types of electronic or Internet-mediated learning continue to thrive across all levels of higher education in order to supplement more traditional ways of teaching (Fathi and Wilson, 2009). Colleges and universities worldwide are employing a diverse form of electronic distance media to deliver educational courses to students without the limitations of location or time (Zacharis, 2015). The Learning Management Systems (LMS) are technological learning environments that provide online course delivery and support student learning by providing content online by allowing for additional components such as assignments, presentations and screencasts, quizzes and forums. (Filippidi, Tselios & Komis, 2010; Conijn et al., 2017).

Filippidi, Tselios & Komis, (2010) asserts that there are several objectives of a LMS system including (a) to bridge the distance between the learner and the learning material and (b) to embed social interactions within the same environment, as a result delivering learners the opportunity to become active participants and not mere receivers of information. Increasingly, the adoption of LMSs have further assisted online, onsite and hybrid courses through their functionalities for communication, content creation, ,assessment and administration (Piña, 2010). A majority of LMSs are web-based and employ synchronous and asynchronous technologies to promote anywhere, anytime access to the course learning content and administration (Black et al., 2007). Ceraulo (2005) argues that through the use of LMS there is an "…emphasis on learning management rather than course management, its ability to store educational content so that it can be referenced by many courses, and its ability to streamline a distance or e-learning, instructor's tasks".

The use of LMS platforms provide students with access to learning materials such as documents, spreadsheets PowerPoint presentations, audio or video of lectures, hyperlinks, submit assignments, track their progress and interact with tutors and peers (Zacharis, 2015). The collaborative and social characteristics of blended learning can be assisted by both the asynchronous and synchronous LMS tools (Zacharis, 2015). Asynchronous found in a typical LMS include email, threaded discussion boards, course announcements blogs, wikis, calendars, and file sharing (Zacharis, 2015). On the other hand, Synchronous tools include such as text chat, whiteboard, and web-conferencing tools and might be available only after installing additional plug-ins or integration packs (Zacharis, 2015). It is not surprising that students' satisfaction with blended learning course delivery is very high, given the ease, convenience and accessibility of online resources available through an LMS (So & Brush, 2008). In diverse blended learning environments, the integration of human interaction to online learning, the balanced combination of self-paced and team activities and a mix of spoken, written and interactive media have been proven to be effective in supporting learning for all personality types – visual, auditory and kinesthetic (Zacharis, 2015).

Since most blended learning courses today are combined with in-class activities with the support of an LMS, student activity can easily be tracked by processing the digital trails left by every online interaction in the system's log file (Zacharis, 2015). A pilot study conducted by Macfadyen and Dawson (2010) to assess the usefulness of LMSs in tracking data and predicting student success where the underpinning research question was to determine if the data collected from the LMS log file was enough to predict grades in a hybrid learning environment. Taking into account all LMS activities related to blended learning were treated equally in a search for significant correlations with student grade and from these activities/variables, 14 were found having significant relationship with final course grade and were included in a multiple regression analysis, in order to develop a predictive model of outcomes in blended learning settings (Macfadyen and Dawson, 2010). They also note that some integrated online activities are likely to translate into effective learning strategies but 'more time spent on online activities' does not simply predict higher achievement (Macfadyen and Dawson, 2010). An important finding, they state is that the instructor intentions and knowledge of actual course design is crucial in order to determine which LMS variables can meaningfully represent student effort or activity (Macfadyen and Dawson, 2010).

LMS allows students to interact with others, develop critical thinking skills, control their own learning and a sense of community with other learners (Al-Busaidi, 2012). Another study conducted by Al-Busaidi (2012) reveals that learners' characteristics (computer anxiety, personal innovativeness and technology experience) are significant factors for student's perceived ease of use of LMS. Instructors' attitude towards LMS and their

control over LMS have also been found to be significant factors for student's perceived ease of use along with system quality, information quality, and service quality are significant factors for student's perceived success of LMS in blended learning and its continuous use (Al-Busaidi, 2012). Al-Busaidi's (2012) study also illustrates that the success of adopting LMS in blended learning positively impacts learners' intention for continued use and that learner's perceived satisfaction and acceptance of LMS is an important element for its survival. Thus, all major entities of LMS adoption such as the learners, course, instructors, classmates, and organization are crucial to the success and survival of LMS (Al-Busaidi, 2012). Zacharis (2015) investigated the relationship of different LMS data variables with student achievement in the context of a blended learning programming course, where hit frequency, time spent online, and the number of discussion messages read or posted are some of the most often investigated components towards student success. The study reviewed the log files generated by the Moodle LMS that hosted a blended learning course to find significant correlations between LMS data usage variables and final course grade which revealed that "52% of the variance in the final student grade was envisaged by just four variables: Reading and posting messages, Content creation contribution, Quiz efforts and number of Files viewed" (Zacharis, 2015).

Other studies conducted such as by Gecer & Dag (2012) aimed to concentrate on the views of the students towards a course where blending of face to face and e-learning methods (which included LMS) were planned and applied. Their findings revealed that from a holistic perspective, students expressed that they found LMS as useful in several ways such as it provided an environment for students in terms of having necessary information about the situation of the course regardless of time and place, following the course content online and exchange of ideas and opinions between tutor-student and student-student (Gecer & Dag, 2012). Since the use of LMS is an important factor in a blended learning environment, greater attention should necessarily be given in designing academic courses with the use of LMS (Filippidi, Tselios & Komis, 2010) and the factors that affect students" expressed practices while interacting with a LMS, to facilitate system's usability and usefulness in order to further promote and motivate the learners to achieve deeper understanding (Filippidi, Tselios & Komis, 2010).

2.3 Blended learning in relation to student perceptions

In this section of the paper, four case studies are discussed. The case study approach sets out the development of four separate researches undertaken in order to investigate the success of information technologies in higher education from the learner's perspective, each employing blended learning to varying degrees. Owston, York & Murtha (2013) examined the relationship between student perceptions and achievement at a university where the university implemented blended learning as a way to increase enrolment by more efficiently utilizing existing classroom space, to improve student learning, to provide greater convenience to its commuter students and to engage students more in their courses. And four research questions related to these goals were constructed and a questionnaire was developed to evaluate student perceptions in each of the question areas. Their first research question dealing with the relationship between satisfaction with the blended course format and achievement were in alignment with the literature outlining that students showed greater satisfaction in blended courses than in traditional lectures but with the exception that the results of the study suggested that only the highest achievers were most satisfied with their blended course, would take one again, and preferred the blended format over fully face-to-face or online (Owston, York & Murtha, 2013). Conversely, the lowest achievers were found to be least satisfied, preferred face-to-face instruction and least likely to want to take another blended course (Owston, York & Murtha, 2013). The overall results of the research raised the question as to whether blended courses are fitting for both low achieving students and high achievers, leading to the study suggesting that low achievers may need the structure that comes from traditional regular face-to-face classes as they may lack the independent study skills that blended learning demands (Owston, York & Murtha, 2013). The study also raises the question as to whether academic subjects that are difficult for students to master are appropriate for delivering using the blended format or if other paths can be obtained in organizaing and designing blended courses in ways that will better support these students (Owston, York & Murtha, 2013).

Another survey formulated by Akkoyunlu & Soylu (2008) to identify student's views on blended learning environment. A 50 item questionnaire was designed by the researchers, categorizing the statements in the questionnaire in two main parts, where the first 35 items were arranged to identify students' views on the process of implementation (such as ease of use in web environment, online environment, face-to-face sessions, evaluations concerning the content) and the remaining 15 questions were developed to ascertain their views on blended learning environment in general. The results revealed significant differences in students' views on blended learning regarding their learning styles when compared the means of those students categorized as assimilators (Akkoyunlu & Soylu, 2008). Assimilators focus on logic, ideas and concepts; prefer to work alone; are good at systematic planning and usually learn by thinking and watching (Kolb, as cited in Akkoyunlu & Soylu, 2008). Consequently, no significant difference on students' achievement was found regarding their learning styles, however online courses must be developed well in order to assists learning to occur (Akkoyunlu

& Soylu, 2008). Results of the findings further determine that face to face interaction is a must for students, student feedback revealed that the provision of the blended learning was highly appreciated and positively rated by them and also at the same time, students' reflective reports exhibited that blended learning was felt to have enhanced their learning opportunities (Akkoyunlu & Soylu, 2008). Akkoyunlu & Soylu (2008) state that when designing a blended learning environment, adequate support strategies must be committed to for students with various learning styles and adapt to online course designs to accommodate these styles, as catering to the different learning styles eventually could result in higher retention in blended learning environment.

So & Brush (2008) examined a graduate-level blended-format course in Health Education at a large state university, where in terms of technology, courseware CD-ROM and a learning management system were provided to deliver learning content and assist online learning activities. The study analysed students by asking them to complete the CLSS questionnaire at the end of the semester and student profiles were drawn up based on their responses. These profiles consisted of an individual student's average scores in three categories: (a) overall perception of collaborative learning, (b) overall perception of social presence, and (c) overall perception of satisfaction (So & Brush, 2008). Data regarding general characteristics of participants were examined on (a) age, (b) computer competency, (c) number of distance courses taken prior, (d) preference to individual learning, and (e) amount of collaboration in groups were related to the perceived levels of satisfaction, collaborative learning, and social presence (So & Brush, 2008). And three statistically significant relationships were discovered in the study. Firstly, the perceived levels of student satisfaction were positively related to student ages which indicated that older students were more likely to have higher satisfaction levels than the younger students. Secondly, the number of distance courses that students took prior to the Health Education course was positively linked with student perceptions of satisfaction, which revealed that students who had previously taken more distance courses were more likely to have higher satisfaction levels than those who had taken fewer distance courses. And lastly, a significant relationship was found between social presence and preference to individual learning where a negative correlation indicated that the participants who favoured to work individually rather than working in a group perceived lower levels of social presence than those who reported a preference for group learning.

Gyamfi & Gyaase (2015) carried out as a formative experiment at the Kumasi Campus of the University of Education (Winneba) with 75 students to determine the demographic characteristics of the students and their perceptions to use ICT tools in learning in order to aid the design of the instructional environment. The findings in their study are drawn from the students' perceptions in terms of the quality of the content, learning, communication and the level of engagement experienced by their using the blended learning environment in the University setting. The study states that from the classroom observation, informal conversational interviews with the students and the survey of the students endorse the findings of previous research that when learners are assigned with multiple formats of learning materials in blended learning environment it could sustain the students' interest and therefore aid their cognitive engagement. Referring to the activity logs on ABLECAT (A Blended Learning Environment for Collaborative and Active Learning model), it was revealed that most of the students logged in to view the course materials (lecturer's video explanations, lecture notes and comments, links to websites on the course) every week, indicated by more than 80% students perceived that the learning materials explained the concepts in course very well and thus were relevant to their needs. The activity logs on course materials were reported to be found higher when the students were asked to take course work or assignment on the topic for the week, which indicated that ease of access to the course materials. Gyamfi & Gyaase (2015) state that any adoption of the blended learning environment in a university-wide situation would require investment in Internet infrastructure to make it successful. Findings from both the qualitative and quantitative data suggested that when learners were provided with adequate and appropriate communication tools in blended learning environments it enhanced interaction and collaboration with their peers and tutors and thereby enhance their development of knowledge and skills in the course. Much of this interaction took place through e-mails and forums, which created an avenue for the students to frequently exhibit their knowledge and writing skills in the course, indicated by more than 70% of the students who agreed that the feedback/answers they received on the tasks and quizzes were very helpful in the course (Gyamfi & Gyaase, 2015).

3. RESEARCH DESIGN

Desk Research technique was conducted for this study which basically involving collecting data from the existing online library which covered several academic databases such as the EBSCHO, Pro Quest, ScienceDirect, Academia, Wiley and Google Scholar. The important aspect of this online search is to refine the search technique in such a way that results are promising and relevant. The main purpose of using desk research is to generate new insights from the previous studies. Reanalysing the previous literature may lead to unexpected new discoveries. The keywords incorporating 'blended learning' as part of the search were used; some of the other key words used for collecting previous literature were blended, distance, computer assisted,

learning management system, education, higher education, students, tertiary education and undergraduate. The searches were then repeated, adding the other key words such as case study, perceptions and learning methods. Literature which met the inclusion criteria was reviewed in its entirety.

In all, the ensuing literature review covers only 43 articles that were relevant to the present study, resulting from a very wide search and analysis of approximately 75 papers. Manual searches based on the reference lists and bibliographies of articles, reports and books considered relevant to this study were also performed.

4.   RECOMMENDATIONS

Correlations have been observed between blended learning variables and others that influenced student's performance, understanding of the course in question, enhancing and supporting the learning process, coinciding with the results of earlier studies that were undertaken.

Higher educational institutions must look beyond the traditional boundaries of classroom instruction and engage in augmenting their current best practices with new advances in learning and collaboration technologies in order to provide students with meaningful opportunities for learning development and social interaction. There is need to develop learning management systems in a strategic way results of this study suggest us to invest developing LMS in a strategic way that incorporates diverse activity items in the best possible way such as resources, lecture notes, group works, quiz, wikis, and discussion forums announcement and assignment submission.

Moreover, educators should carefully design courses in ways with multiple means of expression and engagement, representation, to scaffold and support students in the creation of their own individualised blend. Students can engage and develop their skills as reflective, self-directed, self-regulating and eventually self-determined learners (De George-Walker & Keeffe, 2010).

However, as mentioned before not all students may be able to function in this learning environment as well and hence, university implementation planers may want to consider offering students a choice of whether to enrol in blended or fully face-to-face course sections where suitable. Besides this assistance could be provided in developing blended courses in such a way that address those who are not able to cope well with the blended learning environment. Simply turning classroom turning courses into blended formats do not necessarily provide students with more interactive and flexible learning experiences and could result in increased the extraneous or ineffective cognitive load in learning processes.

5.   CONCLUSION

The richness of the vast literature available has illustrated several implications at the end of this review. It has been repeatedly stated in the paper that students in the blended courses were motivated and satisfied with the instructor's support and course policies tend to perceive their learning outcomes higher. Previous researches discussed above have shown a high degree of motivation, utility and satisfaction perceived from blended learning, which results in students to have a positive attitude towards learning. As suggested by So & Brush (2008) a more careful analysis of learners, contexts, and technologies is required. Further research should be undertaken in order to compare blended learning environments from the perspective of student success and carrying out studies that considers individual differences and interaction types as the independent variable would be fruitful.

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