QUALITY OF BLENDED LEARNING EDUCATION IN HIGHER EDUCATION

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ABSTRACT

Higher Educational institutions are increasingly using blended learning strategies to deliver course content to diverse and dispersed student cohorts. Blended learning is a mixture of online and face-to-face learning. In the literature, blended learning is also known as 'hybrid learning' or the 'flipped classroom'. The reason for this happening is that it creates a potential to provide flexible access to content and instruction at any time, from any place and cost-effectiveness for HEIs. Implementing a blended learning program requires coherent and coordinated planning to be successful. The literature suggests that continuous evaluation of blended learning programs is essential. With this view, this paper is focus on assessing the quality of blended learning education at Arab Open University, Oman Branch. The success of blended learning programs inevitably relies on students' equitable access to technology. Ozkan & Koseler in 2009 developed a Hexagonal E-Learning Assessment Model (HELAM) a conceptual e-learning success evaluation model which is also validated by the authors for assessing learner satisfaction with both internet-based LMS and blended learning. It contains six dimensions such as Supportive factors, Learner perspective, Instructor attitudes, System quality, Information (content) quality and Service quality. This research, is trying to explore the importance of each dimensions of HELAM which directly affects the overall success and learner's satisfaction at AOU, Oman. HELAM, focusing on understanding the learners' perceived satisfaction from an e-learning environment. The data has been gathered from survey questions, informal interviews from the students of AOU, Oman Branch. Descriptive analysis has been used to analyze the data. Blended learning in HEIs programs improved retention and correlated with improvements in students' attainment. It also improves attendance at face-to-face classes, in self-report measures of student satisfaction, and in examination performance. The students' attitude toward blended learning is positive. Effective blended learning is in making students active learners in their area of specialization. The learning management system definitely aids blended learning.

Key words

Blended Learning, Learning Management System, HELAM, Higher Educational Institution, online learning

Introduction

During the past three decades, education in general, and modes of learning in particular, are changing and developing dramatically leaving major impacts on the educational process as a whole (Dweikat & Amer, 2017). Educational institutions are increasingly using blended delivery strategies to deliver course content to diverse and dispersed student cohorts (Meyer et. Al., 2014). Blended learning is a mixture of online and face-to-face learning. In the literature, blended learning is also known as 'hybrid learning' or the 'flipped classroom' (Bowyer, 2017). In recent years, blended learning has become a popular teaching strategy because of the development of data analysis and computation (Lu, et al, 2018). Schrum (2011) avers that technological advances have exceeded even the most optimistic expectations. She also states that technology has had a positive impact on education, even if it has not yet resulted in wholesale educational transformation. As a result new modes of education and trends have emerged to cope with such ongoing changes in the field of education and the different modes of education are Open Learning, Distance Education, E-learning and Blended Learning. These trends, on the other hand, have expanded and shifted their focus to the extent that a large number of academic institutions are now concerned with blended learning programs. One of these institutions is Arab Open University (AOU) in Oman, which believes that the time has come to meet the needs and expectations of its learners who are working in the context of increased responsibilities and time pressures. Arab Open University has its headquarters at Kuwait and the number of students in Arab Open University is around 29,000 attending 8 branches in all the GCC countries. Under these conditions, there is an apparent, compelling demand and a dire need to shift from face-to-face meetings and lectures to ones that involve a more flexible blend of face-to-face and e-learning activities. One of these trends recently applied is blended learning which aims at skillfully combining e- learning with face to face instruction so as to create a positive experience for both of the instructors and the students (Dweikat & Amer, 2017).

Literature Review

Boelens, Van Laer, DeWever, and Elen (2015) define blended learning as "learning that happens in an instructional context which is characterized by a deliberate combination of online and classroom-based interventions to instigate and support learning" (p.5). Blended learning appears to be most commonly used in Higher Education. There is some evidence that the introduction of blended learning can lead to improved

course outcomes, in terms of higher student retention as well as increased pass rates. Studies by López-pérez, pérez-López, and Rodríguez-Ariza (2011) and Boyle, Bradley, Chalk, Jones, and pickard (2003) found that the introduction of blended learning in HE courses improved retention and correlated with improvements in students' attainment. Agreeing with these definitions but with a little twist, Hartman et al. (2007) defined it as courses that combine face-to-face classroom instruction with online learning and reduced classroom contact hours. Valiathan (2002) stated that blended learning combines online learning with face-to-face learning. The goal of blended learning is to provide the most efficient and effective instruction experience by combining delivery modalities. In the following paragraphs we highlight some of the research that has addressed the global trend of blended learning.

A Delphi study including experts from around the world (North America, Asia Pacific, Europe and beyond) considered how blended learning could support collaborative learning. These experts generally agreed that blended learning "offers unique opportunities for international collaboration". They also suggested that new adopters will need examples of international collaboration to effectively navigate this and other complexities of blended learning. Though it is encouraging that experts are positive about international collaboration, this and other research omits both specific examples of BL collaboration and explanations as to why it is possible and advantageous (Spring & Graham, 2017).

In this respect, Sharpe et al. (2006) offered three distinct models for the purpose of thinking about blended learning from a historical perspective. The first model is blended learning as a supplement to traditional programs, e.g. the provision of additional materials and guidance through a virtual learning environment, e-mailing PowerPoint slides to delegates, use of online communication tools such as chat rooms or discussion boards, use of social software such as wiki or blogs, use of online quizzes, or additional resources provided via CD-ROMs or DVDs. In such a model we can notice that the face-to –face activities encompass e-activities or e-resources and vice versa. The second model is a transformative approach where new programs are designed or previously existing programs are redesigned to integrate a wide range of approaches to learning and teaching relevant to the learners and the context of learning. The third model is the learner-led one, which is holistic and typified by the use of a wide range of technologies, including mobile phones, iPods ,emails, social networking software such as MySpace or Facebook, weblogs and message systems. These are tools that are commonly used on day-to-day basis, e.g. for social reasons, and they are often the preferred communication tools of different groups of learners (Dweikat & Amer, 2017).

According to Moebs and Weibelzahl (2006), blended learning (BL) or hybrid learning describes a learning environment that either combines teaching methods, delivery methods, two media formats or a mixture of all these. It also refers to the integrated learning activities such as a mixture of online and faceto-face learning. Blended learning , however, is usually referred to as a hybrid model at university practices, which are courses in which a significant portion of the learning activities have been moved online, and time traditionally spent in the classroom is reduced but not eliminated.

In a nutshell, blended learning is based on a wise and balanced rated combination of traditional learning with web-based online approaches, which in turn, involves a combination of media and tools deployed in an e-learning environment and the combination of a number of pedagogical approaches (Dweikat & Amer, 2017).
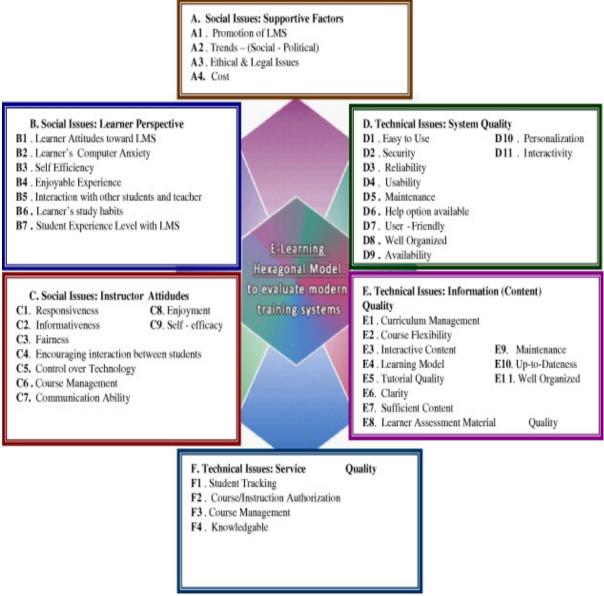
Purpose of the Study
The primary objective of this study is

- To assess the quality of blended learning education at Arab Open University, Oman Branch
- To investigate students attitude towards the blended learning education and its impact on learning.
- To analyze and describe the possibilities of improving blended learning education in Arab Open University, Sultanate of Oman
- To investigate the effect of using the Hexagonal E-Learning Assessment HELAM Model on students' attitudes toward blended learning at Arab Open University, Oman Branch

Hexagonal E-Learning Assessment Model (HELAM)

HELAM (Hexagonal E-Learning Assessment Model) (Ozkan, et al, 2008)

HELAM is a conceptual multidimensional model for evaluating learning management systems in terms of perceived learner satisfaction (Ozkan & Koseler, 2009). It contains six dimensions (see Figure 1) assessed via a questionnaire. The instrument has been validated and all six dimensions were found to be important. The authors note the model is based on student perceptions only and does not consider the perceptions of other stakeholders such as teachers, system developers and administrators.

Hexagonal E-Learning Assessment Model (HELAM) is a conceptual e-learning success evaluation model for assessing learner satisfaction with both internet-based learning management systems and blended learning. HELAM has been developed for assessing the e-learning effectiveness according to 6 dimensions of e-learning: Technical Issues: System Quality, Technical Issues: Service Quality, Technical Issues: Content Quality, Social Issues: Learner Perspective, Social Issues: Instructor Attitudes, and Supporting Issues (Ozkan, et. al. 2008).

In the HELAM model, user satisfaction is the main point of the evaluation. It is defined by two different variables one of which is expectation from LMS, and the other one is confirmation of these expectations. If the level of user satisfaction realized is below than the expected net benefits, then the LMS can be regarded as unsatisfactory and unsuccessful. Vice versa, if the level of user satisfaction realized is above or equal to the expected net benefits, the LMS can be regarded as satisfactory and successful (Ozkan, et. al. 2008).

Methodology
The focus of this research is to assessing the quality of blended learning education at Arab Open University, Oman branch in relation to its factors. The posttest survey questionnaires were developed in conjunction with the literature review aimed at understanding quality of blended learning education. The study adopted the survey research design using structured questionnaire that collects demographic data. The questionnaire also collects data on the six dimensions such as Supportive factors, Learner perspective, Instructor attitudes, System quality, Information (content) quality and Service quality which will assess the quality of blended learning education.

Research Instrument and its Reliability
The major instrument for collecting data is the questionnaire. The questionnaire was developed to assessing the quality of blended learning education at Arab Open University, Oman branch. The questionnaire consists of few questions on demographic variables and remaining questions on various dimensions to measure the quality of blended learning education at Arab Open University. In this research, the respondents were required to indicate their opinion on each statement on a five point Likert type scale: 1=strongly agree to 5=strongly disagree.

The questionnaire was submitted to the experts in the field of blended learning for getting feedback. Based on their feedback minor changes has been made on the questionnaire and distributed to few sample population for the pilot study and the reliability was calculated with the help of cronbach alpha (Hair et al., 1998). Cronbach Alpha value was calculated and it was found to be 0.946 and the total numbers of questions were 30. The values were found to be in the range of 0.60 and 0.90, hence it might be suggested that all the scales met the reliability condition (Hair et al., 1998, p.118).

Sampling
The survey population of this study consists of students of Arab Open University, Oman branch. Convenience sampling method was used to draw 261 samples from various departments of the university. The respondents were clearly explained about the purpose of this research before collecting data. At the final stage, 246 questionnaires, which consist of the measurement, was distributed among students of Arab Open University, Oman branch. 231 completed questionnaires were returned. Due to some limitations, the sample size was 226 students, but accuracy is not compromised, all the samples were thoroughly evaluated and on the other hand it was found that there were few errors in 5 samples; they were not valid, so it got removed and finally 221 samples were taken for the final analysis.

Discussion & Results
The data that was collected for this study was processed manually through coding and then entered electronically. The Microsoft Excel and Statistical package for Social Sciences (SPSS) were used for the analysis. The use of statistical distributions such as tables showing frequencies and percentages were adopted in the study. Descriptive analyses were used to compare the demographic data of the study participants. The weighted average method was adopted for all the six dimensions such as Supportive factors, Learner perspective, Instructor attitudes, System quality, Information (content) quality and Service quality.

Descriptive Analysis

Table 1 presents the demographics data based on age, gender, student status and department of respondents with their description range and frequency.

Description		Respondents	Percentage
Age Group	Below 20	10	5%
	21 -30	160	72%
	31 - 40	47	21%
	41 - 50	4	2%
Gender	Male	84	38%
	Female	137	62%
Student Status	Full Time	106	48%
	Open Learning	115	52%

	Business	112	51%
	Information Technology	62	28%
Department	Education	29	13%
	Language Studies	18	8%

The analysis reveals that majority of the respondents 72% were in the age group of 21 – 30, 21% fall between the age bars of 31 – 40. In respect to the gender, 38% of the students are men and 62% of the respondents are female. This is because of the full time ministry students. In respect to the student status in the university, 48% of them are full time students sponsored by the Ministry and the remaining 52% of the students are open learning students.

In order to understand the student affiliation to their specialization, the department in which they registered was enquired and it was tabulated and it was found that 51% of the student belong to the Business department, as it is one of the largest department in the university, so the weightage was given more to them, 28% of the students are belong to Information Technology department, 13% of the students are belong to Education department and the remaining 8% of the students are in Language Studies department which is one of the smallest department in terms of number of students enrolled.

Weighted Average Analysis
The weighted average analysis was conducted for six dimensions such as Supportive factors, Learner perspective, Instructor attitudes, System quality, Information (content) quality and Service quality. In each dimension, the researcher was trying to list out the important factor in rank order.

Table 2 Learners Perspective

Learners Perspective						Average	Rank
Face-to-face education is better than distance education in learning process	20	29	35	65	72	**3.63**	**1**
I can manage my "study time" effectively and easily complete assignments on time by using LMS & E.Library	19	56	89	52	5	**2.86**	**5**
I enjoy attending to the AOU program overall	26	46	68	61	20	**3.01**	**4**
LMS makes the communication easier with instructor and other class mates for me	31	26	58	68	38	**3.25**	**3**
In my studies, I am self-disciplined and find it easy to set aside reading and homework time	13	35	69	84	20	**3.29**	**2**

The above table presents the students perspective on the learning in the university and it was analyzed with the help of weighted average method and it was found that face to face education is better than the distance education, it shows that both the full time ministry students and the open learning students were very much interested in the face to face education followed by self-discipline, the student strongly agreed that they have intention to read and work at home as it is a blended learning system. They also agreed that LMS plays a major role in communication. The LMS is the major tool for the blended learning system. The effective use of LMS determines the effectiveness of blended learning in higher education. LMS makes the student life easier which act as a communication medium with the tutors. However the students find little difficult in complete their assignments as it demands lot of critical analysis and reflection with appropriate references. The university should think of providing additional training on the E.Library usage to the students to improve their quality of education and learning.

Table 3 Instructor Perspective

Instructor Perspective						Average	Rank
Tutors clearly informs the students about grading policy	35	19	54	77	36	**3.27**	**5**
Tutors frequently updates lecture notes & Presentation in the LMS	23	31	54	85	28	**3.29**	**4**
The Tutors responds promptly to questions and concerns	22	30	50	82	37	**3.37**	**2**
The Tutors are good at communication with students	12	28	49	65	67	**3.67**	**1**
Tutors are encouraging students to interact with other students by using Discussion Forums, chat rooms and other Online interactive tools	16	26	68	92	19	**3.33**	**3**

Table 3 presents the ranking of perspective of students on instructor, according to the students of Arab Open University, it was clearly found that the tutors in all discipline are good at their communication with the students; the students didn't face any difficulties. Students also agreed that they didn't find difficulties with the tutors as they respond to them promptly to their queries. This is one of most important culture in Arab Open University, which all the tutors are following their office hours and even after office hours they are ready to support the students and resolve all their issues in academics.

Another important aspect of the tutor is to encourage the students to interact with other students and encourage them to participate in discussion, forum, chat room to improve their communication skills, the students also acknowledged the same in their responses on the tutors. However the students felt that there is an improvement is expected on the grading policy, they expects that the tutor should give enough comments on what basis their paper or assignment was marked. All the tutors are working on improving the quality of the education in the university, it will be highly appreciated if they give appropriate comments and justification for their grading, so that the students will be able to overcome their mistake next time, it will be a good learning practice for the students to improve their knowledge.

Table 4 System Quality

System Quality						Average	Rank
LMS supports interactivity between learners and system by chat, forums, discussions	23	26	79	70	23	**3.20**	**3**
Navigation in LMS is very easy	23	45	59	57	37	**3.18**	**4**
I can find required information easily in LMS	25	48	57	57	34	**3.12**	**5**
LMS Online is easily accessible via internet	7	14	86	80	34	**3.54**	**1**
LMS -Online is a good educational portal and improve my learning	23	33	68	66	31	**3.22**	**2**

The students were asked to give their opinion on the system quality, after the analysis it was found that the student fully agreed that LMS online is easily accessible via internet, as the LMS is one of the important tool for the blended learning system, all the materials and the announcements will be uploaded in the LMS by the tutors, the students can access LMS from anywhere. Also the students acknowledge that the LMS is a good educational portal and it improves the learning of the students followed by LMS act as an interactive tool between the

students through chat, forums and discussions. Almost all the tutors initiate the discussion in the LMS and ask the students actively engage in the learning, this also helps the students to learn more from other students.

However there is need to improve the visibility of the information in the LMS, the tutors have more option to highlight the important information in the LMS which could be done by the tutors in the near future. It is suggested that even all the tutors should undergo additional training on LMS on how to effectively use it and how it is beneficial to the student in learning and improving their knowledge and skills. The navigation is yet another problem faced by the student; it is the high time to provide additional training on LMS and its usage to all the students from all the discipline so that the students will get the full benefits of the LMS and its usage. The important factor for the quality of blended learning is relay on its tool which is Learning Management System.

Table 5 Service Quality

Service Quality						Average	Rank
The service supported by AOU is good enough	28	46	79	56	12	**2.90**	**5**
I do not encounter any problems during communicating with AOU administration	10	44	99	50	18	**3.10**	**3**
I do not experience any problems during registrations	13	54	80	56	18	**3.05**	**4**
I can easily solve when I encounter a problem during admission to a course in registrations	19	45	69	61	27	**3.14**	**1**
AOU provides admission requirements information on-line	12	42	85	67	15	**3.14**	**1**

With respect to service quality, the students acknowledge that they find it very easy to solve their problems which they encounter during their registration to the courses for the new semester. The usual practice in Arab Open University is that all the tutors will be allotted with the specific number of students to advice, after the successful completion of the semester, the tutor will check the students plan and do pre-advising for them and this will largely help the student to register their course online from anywhere. Only if the students wish to change the course pre-advised or any issues in time clash, they will come in person and meet the tutor advisor for changes otherwise, the registration will be done smoothly and there is a very effective registration and admission department working in the university to support the students in all means.

The student's relationship with the admission and registration department is very smooth and no issues were found. However the student felt that if they come across some issues during their registration of the courses while they were outside, it makes them to come to the university in person and it consumes lot of time for them and sometimes they find it difficult to come in person, so it is advised that the tutors should take more care in providing pre-advising to students. The student felt that they need more support services from the university in terms of improving the service quality.

Table 6 Supportive Issues

Supportive Issues						Average	Rank
AOU Provides a pleasant environment for learning	22	52	87	49	11	**2.89**	**5**
AOU programs lecture notes are prepared by obeying the ethical and legal issues	7	28	87	82	17	**3.33**	**2**
I obey the ethical and legal issues in the course related testing, assignments	8	37	92	65	19	**3.23**	**4**
I am aware of the consequences of any forms of plagiarism	18	22	86	66	29	**3.30**	**3**
I am aware of the cheating policy of the university	8	22	92	53	46	**3.48**	**1**

Students were asked to provide their opinion on the supportive issues during their stay at Arab Open University. The student fully agreed that they were aware of the cheating policy of the university. The university management and all the tutors take more care on the creating awareness among the students on cheating policy. All the tutors in their respective classes, they educate student on plagiarism in the assignment. If the student gets more that 30% plagiarism in the assignment, they will be awarded zero, so the tutor is educating the students how to avoid plagiarism and the university keep lot of banners stating the importance of the avoiding the plagiarism in the assignment and also about the cheating policy. Students also acknowledge that they were aware of the consequences of the plagiarism and the cheating. Students agreed that the tutors lecture notes are prepared by obeying the ethical and legal issues.

The plagiarism is not only for the students, it is also for the tutors while they prepare the lecture notes. However the student felt that there is need for the improvement from the university management side to improve the pleasant learning environment for learning, they highlight that the space in the university is limited and is one of the constrain for them during learning. University is also looking alternative solution by adopting another building for rent and also working on the own building for the university, by which this issues will be solved and students will get a pleasant learning environment.

Implication
As a result of the frequent use of blended learning with its well-known popularity, especially in the last two decades, some educators now claim that blended learning has the potential to go hand in hand with the philosophy of distance and open learning to the extent that blended learning can supplement the objectives of such distance and open learning in many fields (Dweikat & Amer, 2017).

The finding revealed that the student attitude and the opinion towards the blended learning at Arab Open university was highly appreciated and they felt that they were able to learn better and reproduce during their preparation of assignment and the final exam. The merits of using this blended learning might be based on the fact that such strategy has the potential to offer more learning opportunities added to the face-to-face lectures so as to enable students who are often absent from the regular face-to-face lectures to be able to improve their course grade by viewing the lectures online or to use recorded supplementary materials at home.

From the findings, some important implications and recommendations can be given in this regard. First, since students have positive attitudes towards the proposed model of blended learning, teachers and instructors should try their best efforts to create a more flexible environment that employs a combination of resources and involves the provision of additional materials and guidance to enable learners to optimize their learning experience (Dweikat & Amer, 2017). Another implication is that if the instructors at AOU are the persons to be responsible for improving methods of delivery of the instructional materials, they must be trained and motivated to improve their skills and potentials in this regard.

It is also suggested by Polding (2007) study which suggests that keeping staff engaged with the process of integration is the most important aspect of e-learning as it leads them to feel confident and supported throughout the entire cycle causing the process of change run more smoothly and yield to better results. Taking into consideration the advantages of blended learning should not be the objective as the human element will always be the most dominant factor in running the process of learning. Blended learning can be used to support and supplement the human teacher and learner when enriching the educational setting and make it very relevant and appealing (Dweikat & Amer, 2017).

Conclusion

Considering the present research findings presented earlier, several implications are considered. This study contributed to the literature on blended learning in Sultanate of Oman. This study is the modest attempt to understand the student's attitude towards the quality of blended learning in Arab Open University, Oman Branch. The limitation is that this research employed convenience sampling to accomplish the research objectives. The limitations associated with the convenience sampling are applicable for this study. The sample size is yet another limitation to this study; the sample size is not enough to represent all the students of Arab Open University, Oman branch. Maybe in future there is a possibility of going an intensive research in the Oman branch and also it can be extended to all the branches of Arab Open University.

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