E-Learning and Students Satisfaction – Case Study MEDIU

Najeeb Abbas Al-Sammarraie, Yousef A.Baker El-Ebiary, Suhad Ibrahim Kazem, Seita Almandeel, Areej Alshamasi

Abstract: ***This study attempts to ascertain the specified factors impacting students of two distinctive faculties of Al-Madinah international university (MEDIU) on e-learning use. Some of the students were online students, whereas some were on-campus students. E-learning management system is a supporting education system which facilitates learner in learning from his/her location at any time and place. Albeit the improvement of technology particularly in the education domain, some varying factors still appear to impact learners. Notably, traditional classroom is still in use, and some incorporate the technology with the traditional classroom. A total of 101 students (31 finance students and 70 information and communication students) participated in the study. Accordingly, seven distinct factors were tested. The result shows the majority of students are impacted with 6 factors.***

Index Terms: Electronic Learning, MIS, Integrated systems.

I. INTRODUCTION

Swift expansion of ICT greatly impacted the education domain, in the era of 21st century especially. Accordingly, there was a need for the integration between education and technology, and such integration has in fact eased the communication between students. However, challenges have also been reported in the use of e-learning platform [1] or in the context of Universities, Learning Management System (LMS). LMS comprises a platform which enables lectures to manage material sharing, assignment and communication and other teaching related elements [2]. LMS has become a crucial constituent in educational system, and its usage is highly common in most higher learning institutions particularly universities, because it strengthens the approaches of traditional learning in classrooms and their online activities [3].

LMS will be the replacement for the conventional classroom environment for the purpose of swapping the traditional chalk and board lectures with courses that are accessible by both lecturers and students from the campus and from the Internet as well [4]. The major benefit of LMS is that it enables both students and their lecture easy access to the system and easy learning as well. LMS encompasses the use of web blackboard, and in fact, blackboard was developed and maintained by LMS. It comprises several administrative tools that give support to educator and learner in performing their classroom related task [5]. It functions as a learning platform, and instructor and students employ this blackboard to communicate with one another.

Essentially, this paper will discuss how LMS will enhance the domain of education because the last four years have seen the decline in the traditional learning. This happens due the decline in the number of enrolling student. Furthermore, for administrators, traditional learning is not easy to manage. Meanwhile, e-learning may be of assistance to the students in accessing and using LMS for the purpose of attaining full recourse. For the lecturers, LMS eases them in guiding the students in the utilisation of the appropriate resource. Accordingly, in the context of education, e-learning can be employed in countless of ways.

E-Learning encompasses technology usage in assisting and improving learning. E-Learning can be as straightforward as a pre-schooler watching a video documentary in class, or as multifaceted as a university course being offered entirely online. In fact, e-Learning was first applied decades ago, following the introduction of televisions and over-head projectors in classrooms, and as time passed, e-learning has progressed with the use of 3D simulations, interactive computer programmes, video and telephone conferencing and real-time online discussion groups comprising learners globally. The technological progressions have also advanced e-learning, leading to the endless possibilities.

II. PROBLEM STATEMENT

LMS has been studied by many, and most of these studies were concentrating on the technical element, such as the assessment of the usability and system support [6]. On the other hand, only few were looking at the actual experiences of users in their LMS use in learning and performing their classroom related activities. In this study, the focal point is Al-Madinah international university, while the students were the primary users of the system. The students in this study were of two types, namely, online students and on-campus students, and both were selected to partake in this study. In this study, only the students were

Revised Manuscript Received on December 22, 20

Najeeb Abbas Al-Sammarraie, Assoc. Prof. Dr., Faculty of Computer Science and Information Technology, MEDIU, Malaysia, dr.najeeb@mediu.edu.my

Yousef A.Baker El-Ebiary, Assoc. Prof. Dr., Faculty of Informatics and Computing, UniSZA University, Malaysia, yousefelebiary@unisza.edu.my

MazinHaithemRazuky, Computer Science Department, Baghdad College for Economic Sciences University,Mazin.haitham@gmail.com

Seita Almandeel, Faculty of Economics and Administration, Business Administration Department, King Abdulaziz University, Jeddah, Saudi Arabia

Areej Alshamasi Faculty of Economics and Administration, Public Administration Department, King Abdulaziz University, Jeddah, Saudi Arabia

Retrieval Number:F10360476S519/19 ©BEIESP

Published By:
Blue Eyes Intelligence Engineering
& Sciences Publication

chosen as participants. This is to gain better knowledge regarding LMS through the scrutiny of users' experience.

In a lot of ways, e-learning is regarded as risky, especially when it involves students as the use may affect their educational well-being. In some studies, it was claimed that the system employed in e-learning does not fully cater to students' needs [7]. For the purpose of comprehending the performance of students in an average online course in a given sector, it would be most beneficial to make a comparison between a large and illustrative set of online courses between the equivalent set of face-to-face courses. In this regard, the researcher found only one such study that reported high score of online students as opposed to their face-to-face counterparts [8].

For better comprehension on the subject, the study will gather information regarding the observation of students on their learning effectiveness. Specifically, this study will evaluate LMS and how the satisfaction of students in online learning can be increased.

III. LITERATURE REVIEW

E-learning can be classed into several types, for instance, online learning, where learner enrols for the class with no face-to-face meeting [9]. Online learning is in fact a global learning method with qualification standard, and learner is not required to physically attend the class. This type of learning is suitable for learners with commitments, and yet, they are still interested in studying [10].

Another form of e-learning is blended learning. This type of learning incorporates technology and traditional classroom. This learning type is does not require full face-to-face teaching, decreasing the actual time spent in the classroom [11]. As illustration, a course that would require 3 physical lecture sessions weekly if conducted using traditional method may require only 1 lecture session weekly if executed using blended learning, as the other 2 lecture sessions can be conducted online [12].

Mobile learning or M-learning encompasses a learning method with the use of hand-held devices (e.g., tablet and Smartphone). In Wikipedia, mobile learning was delineated as learning through numerous contexts, and through social and content interactions, with the use of own electronic devices. The concept of m-Learning is akin to that of e-Learning with the exception that the platform of electronic media for M-Learning is precisely elucidated as personal devices or portable technology. M-learning allows employees or students access to training content at all times and places that they can utilize their mobile device. Accordingly, it was estimated that by 2015, roughly 80% of people will use mobile devices in accessing the internet [13].

M-learning entails mobile technology use either by itself, or together with other ICT, with the purpose of allowing learning that is unrestricted by time and place. Accordingly, there are many ways to engage in learning. For instance, one can employ mobile devices to gain access to educational resources, generate content, and connect with other, within or beyond the classrooms. Similarly, m-learning entails attempts at supporting general educational goals including the effectual administration of school systems and better communication between educational establishments and families. Regards to synchronous learning, it is usually supported by media including audio, chat, and video conferencing. Such type of learning encourages commitment from learner while also assisting learner in his involvement with teacher and in producing lesson relation enquiries when necessitated.

In the context of asynchronous learning, it involves the use of media including discussion board and e-mail as support to both learner and teacher. Interestingly, this type of learning does not require one to be online, and therefore, it is a flexible type of learning. In Wikipedia, asynchronous learning was delineated as a student-centred teaching method which employs online learning resources in easing the sharing of information outside the bounds of place and time, among a network of individuals. Notably, online courses are very popular among learners, especially those who are employed and/or with other commitments. With the application of asynchronous learning, learner can go through the documents at their convenient time, and whenever they face difficulty, they may consult the instruction. Notably, prior to the advancement of learning related technology online education mostly comprised asynchronous learning methods.

Web-Based learning covers all educational participations that involve the use of internet or extranet. Accordingly, web based learning primarily includes the use of: learning tutorial, online discussion group and virtual patients. In essence, web-based learning can be delineated as learning that involves the utilization of the World Wide Web or the Internet in the delivery of learning and instruction [14]; it is essentially a learning and teaching supported by technology particularly the computer [15] and hence, computer based learning and virtual learning are also other equivalent terms for web-based learning. The delivery of Web based learning is through the internet, video, audio satellite TV and CD-ROM. In order to assure effective use of web-based learning, students need to be computer literate, aside from being adequately able in e-learning system use [16].

Computer based learning involves the interaction of students with a computer as the principal element of learning process. This type of learning covers several different instructions methods and curricula, and as instructor, his or her task is to monitor the activities of students, e.g., if students have downloaded the course materials etc. Computer based learning is expected to impact the change of traditional teaching and leading the values of future learning. Accordingly, 4 main categories of computer-based instruction have been identified as follows: computer-assisted instruction, computer-enriched instruction, computer-managed instruction and computer-simulated instruction [17].

Self-study learning was first introduced in 1970, and this type of learning encompasses computer assisted learning. Among the materials used were floppy disks as the delivery medium of learning, and with the advent of technology, floppy disks were replaced with laserdiscs and then with CD-ROM and at present time with a web browser. Computer assisted learning allows learner to engage in learning process on their own at their place of choice (e.g., home). Accordingly, the computer provides learner with a sequence of lessons in addition to numerous different activities like reading listing, video, etc. Computer assisted learning can offer several opportunities for practice, as well as direct and personal feedback. Notably, this type of learning is rather costly to develop.

E-learning aims at enhancing educational process through the use of technology. However, educational strategy, administrative structure and its accompanying process are also integral to educational success. The advent of technology has changed how education is delivered; now learner can also learn at their place of choice at the time of their choice. Relevantly, IT may cause change to the educational motivation process. Also, the technology allows educational institutions to expand and operate globally, which will increase and expand the rivalry in the global education domain.

Among both developed and developing nations, the quality of e-learning has been a great concern as it contributes to the improvement of education. Apart from that, the 21st century has been dubbed by academics as the century or era of quality where consumers have greater awareness and are interested in quality [18], [19].

Quality concept is defined based on context. For instance, quality of education differs from that of business, and so forth. Hence, the absolute definition of quality does not exist. Accordingly, quality can be delineated as an ensemble of procedures, processes and norms and standards carrying the purpose of accomplishing the satisfaction of the target audience, in regards to certain service or specific product [20].

E-learning management system comprises a platform that facilitates the communication between instructor and students. E-learning management system encompasses a service-based architecture, supported by different browser with the integration of different databases. Also, E-learning management system promotes stability, manageability, and accessibility, and therefore, learner can engage in more efficient communication with their instructor. Apart from that, data can be easily shared. In essence, LMS encompasses e-learning system, and it comprises several phases, where each defines its own activities. Accordingly, LMS provides some amount of activities for students (e.g., assignment, project, discussion, grades, etc.).

E-learning management system has several advantages as follows:

Quality: e-learning management system contributes to the quality of education by improving several aspects including the aspects of pedagogy and design.

Cost effectiveness: e-learning management system significantly decreases educational cost via the reuse of the content of education.

Flexibility: e-learning management system offers flexibility to leaner by enabling learner in fulfilling their educational needs conveniently in the learning environments of their choice, while also changing the environment of educational establishments.

Cooperative: e-learning management system fosters cooperation from all involved parties, and this increases educational opportunities to larger group of learners.

Nonetheless, disadvantages of E-learning have also been discovered as described below:

Technology dependent: Learner would be required to possess a device with a minimum specification as required by e-learning management system supplier with high bandwidth to transfer the course material at the appropriate time.

Material unsustainability: the system may not be fully functional with some program.

Lack of training: some learner may require additional skill in adopting with e-learning management system, and with the improvement of technology with frequent updates, learner may need more training in order to manage it.

Dependency on human support: e-learning requires human assistance and technical support for guiding students. Not equal to face-to-face learning: e-learning management system is no match to the traditional face-to-face learning.

Learner with special needs: Learner with visual and physical impairment is not likely to fully benefit from e-learning.

In a study in Iran, the factors found to impact e-learning management system include Content, ease of use, Technical support, reliability, and Computer self-efficiency, with technical support as the most important [21].

In a study on LMS as a platform for delivery of materials, the factors that could affect the delivery of Online courses were examined, including attitude of student, accessibility, navigation, instructor interaction, and technical support. It was found that the factors that success e-learning system are using discussion board, students' interaction and user friendly interface [22].

Satisfaction towards Learning Management System can be increased through the provision of flexibility, more materials to the system, usability, and instructor's feedback, and students with internet usage experience find the system easy to use frequently, as opposed to those without [25]. Meanwhile, among the key factors found to impact the success of LMS in blended learning are perceived ease to use interface, user satisfaction and usefulness [23]. Furthermore, in order to assure effective use of LMS, learner needs to be experienced in computer use, and well-versed in technology, while also possessing self –efficiency, personal creativity, and innovation.

Retrieval Number:F10360476S519/19 ©BEIESP

Published By:
Blue Eyes Intelligence Engineering
& Sciences Publication

In forecasting of e-learning Management System's success regarding to learners is facilitated by ease to use, online support, admin/management support and the style of interactive learning. Meanwhile, the electronic learning success factors on technical bases are as follows: Adequate e-learning initiatives, Adequate Manpower, Adequate Training to Engineers, Adequate User Training, Easy to Use tools, Management Support, Obtain ability of Information, Organization Commitment, Positive attitude of users, Support from other Departments, and Technical Support [24].

The impact factors that affect of e-leaning systems in education process were examined, and it was found that the components of electronic learning system (user training, infrastructures, capacity of the system, the controls allowed to the users, and technological acceptance form) affect the system's effectiveness. Further, user training affects the effectiveness of e-learning and technological acceptance form also impacts the effectives of e-leaning system [25].

IV. RESEARCH METHODOLOGY

The research employed the quantitative methods, and this involved the distribution of questionnaires to the selected participants to obtain the needed data. SPSS tools were used for analysis purposes. Accordingly, the reliability and validity of this research were ascertained in order to assure consistency, and that the best practices were executed during this research.

V. FINDINGS AND DISCUSSION

Research Sampling entails the selection of a few members from a bigger group. Sampling is performed in order to find the information pertaining to the population and assess the problem which is to be resolved. In this regard, researcher needs to identify the appropriate respondents to partake in the survey. In this study, a total of 150 students were chosen as sample. These students were from two faculties in MEDIU namely the Faculty of Business and faculty of Computer Sciences. The population of this study comprised 400 students, and within this population, some were PhD candidates, and some structure "A" are and this are not including this sample. In this study, 101 usable questionnaires were obtained from online and on-campus students.

The data obtained from the survey were analysed to generate results, and this will enable researcher to ascertain if the objectives of the research have been achieved. Accordingly, the descriptive statistics were employed in this method using SPSS tool software. The demographics analysis was executed based on a sample comprising 101 respondents with the following divisions: 40 online students, and 61 on-campus students. In terms of the faculty that these students belong to, the divisions were as follows: 70 were from the computer science faculty with 31 from the faculty of business. In regards to level of study, the divisions were as follows: 78 were undergraduate students, and 23 were postgraduate students. The majority of students partaking in this study were male 63, while 38 were female. Age-wise, 48 students belonged to the 18-25 years old age group, 34 belonged to the 26-30 years old age group, and 19 belonged to the 31-39 years old age group. In general, 45 students scored A, 34 students scored B, and 22 students scored C.

Among the demographic related questions are as follows:

What is your gender?

	Frequency	Percent	Valid Percent	Cumulative Percent	
Valid	Male	63	61.8	62.4	62.4
	Female	38	37.3	37.6	100.0
	Total	101	99.0	100.0	
Missing	System	1	1.0		

Select your age range:

	Frequency	Percent	Valid Percent	Cumulative Percent	
Valid	18-25	48	47.1	47.5	47.5
	26-30	34	33.3	33.7	81.2
	31-39	19	18.6	18.8	100.0
	Total	101	99.0	100.0	

Martial statuses

	Status	Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Single	76	74.5	75.2	75.2
	Married	25	24.5	24.8	100.0
	Total	101	99.0	100.0	
Missing	System	1	1.0		

Level of study:

	Study Level	Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Undergraduate	78	76.5	77.2	77.2
	Postgraduate	23	22.5	22.8	100.0
	Total	101	99.0	100.0	
Missing	System	1	1.0		
Total	102	100.0			

In which faculty do you belong to?

	Faculty	Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Faculty of Business	31	30.4	30.7	30.7
	Faculty of Computer Sciences	70	68.6	69.3	100.0
	Total	101	99.0	100.0	
Missing	System	1	1.0		
		Total	102	100.0	Total

What is your study mode?

	Mode of Study	Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Online	40	39.2	39.6	39.6
	On-campus	61	59.8	60.4	100.0
	Total	101	99.0	100.0	
Missing	System	1	1.0		
Total	102	100.0			

What is your CGPA score?

Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1	1	1
A	45	44.1	44.1
B	34	33.3	33.3
C	22	21.6	21.6
Total	102	100.0	100.0

Comparison of student's satisfaction:

	N	Min,	Max.	Mean	Std. Deviation
1. The courses are much more convenient.	101	1	4	2.82	.984
2. Money saving.	101	1	4	2.15	.817
3. Time saving.	101	1	4	2.33	.854
4. Courses fit well with my lifestyle.	101	1	4	2.22	1.118
5. I feel more confident when I attend the class.	101	1	4	2.09	.889
6. The courses require more study time	101	1	4	2.00	.877

Usability in general:

	N	Minimum	Maximum	Mean	Std. Deviation
1. I find the site easy to learn.	101	1	4	2.99	.768
2. I find the site easy to navigate.	101	1	4	2.83	.722
3. I find the site easy to use.	101	1	4	2.90	.742
4. My interaction with the site is clear and understandable.	101	1	4	2.96	.677
5. The site has an attractive appearance.	101	1	4	2.83	.722
6. The site has a fast browsing speed.	101	1	4	3.03	.842
7. The design is appropriate for the type of 1 learning site.	101	1	4	3.09	.750
8. The site creates a positive experience for me.	101	1	4	3.03	.714
Valid N (list wise)	101				

System support in general:

	N	Minimum	Maximum	Mean	Std. Deviation
1. Individualized user support system.	101	1	4	2.97	.574
2. Free access manuals/tutorials for self-learning of specific ICT skills are available.	101	1	4	2.88	.668
3. Support system is available 24/7	101	1	4	1.90	.742
4. Feedback tools and procedures are available.	101	1	4	2.91	.763
5. User support for using different mobile devices/operating Systems is available	101	1	4	3.02	.693
6. Support multi browser	100	1	4	2.89	.815
7. Chat/forum channels for user peer support are available.	101	1	4	1.71	1.033
Valid N (list wise)	100				

VI. CONCLUSION

The present paper aimed to identify the specific factors impacting MEDIU's student from 2 different faculties which are Business Sciences and Computer Sciences in both study modes On-line and On-Campus. The results demonstrate the presence of factors impacting all of students as follows: communication, content and practical lab or work experience. Also from the results, it appears that online students are more affected by the factors of communication, content and practical lab or work experience. As for on-campus students, factors that affect them the most are the factors of time and money. On other hand side On-line learning cannot be equivalent to the On-Campus mode.

REFERENCES

1. Sheshasaayee, A., & Bee, M. N. (2018). E-learning: Mode to Improve the Quality of Educational System. In Smart Computing and Informatics (pp. 559-566). Springer, Singapore.
2. Nakamura, W. T., Gadelha, B., de Oliveira, E. H., & Conte, T. (2018). Support material for the development of TUXEL: A Technique for User eXperience Evaluation in e-Learning.
3. Cho, K., Yoon, T., Park, S., & Park, D. (2018, February). Using standardization for fair data evaluation. In Advanced Communication Technology (ICACT), 2018 20th International Conference on (pp. 585-589). IEEE.

Retrieval Number:F10360476S519/19 ©BEIESP

Published By:
Blue Eyes Intelligence Engineering
& Sciences Publication

4. Violante, M. G., & Vezzetti, E. (2015). Virtual interactive e-learning application: An evaluation of the student satisfaction. Computer Applications in Engineering Education, 23(1), 72-91.
5. Martínez-Caro, E., Cegarra-Navarro, J. G., & Cepeda-Carrión, G. (2015). An application of the performance-evaluation model for e-learning quality in higher education. Total Quality Management & Business Excellence, 26(5-6), 632-647.
6. Truong, H. M. (2016). Integrating learning styles and adaptive e-learning system: Current developments, problems and opportunities. Computers in human behavior, 55, 1185-1193.
7. Mohammadi, H. (2015). Investigating users' perspectives on e-learning: An integration of TAM and IS success model. Computers in Human Behavior, 45, 359-374.
8. Khamisa, K., Halman, S., Desjardins, I., Jean, M. S., & Pugh, D. (2018). The implementation and evaluation of an e-Learning training module for objective structured clinical examination raters in Canada. Journal of educational evaluation for health professions, 15.
9. Kwant, K. J., Custers, E. J., Jongen-Hermus, F. J., & Kluijtmans, M. (2015). Preparation by mandatory E-modules improves learning of practical skills: a quasi-experimental comparison of skill examination results. BMC medical education, 15(1), 102.
10. El-Ebiary, Y. A. B., Al-Sammarraie, N. A., Al Moaiad, Y., &Alzubi, M. M. S. (**2016**, October). The impact of Management Information System in educational organizations processes. In e-Learning, e-Management and e-Services (IC3e), 2016 IEEE Conference on (pp. 166-169).IEEE.
11. Mohammadyari, S., & Singh, H. (2015). Understanding the effect of e-learning on individual performance: The role of digital literacy. Computers & Education, 82, 11-25.
12. Arbel, Y., Hong, L., Baker, T. E., & Holroyd, C. B. (2017). It's all about timing: An electrophysiological examination of feedback-based learning with immediate and delayed feedback. Neuropsychologia, 99, 179-186.
13. Abramson, J., Dawson, M., & Stevens, J. (2015). An examination of the prior use of e-learning within an extended technology acceptance model and the factors that influence the behavioral intention of users to use m-learning. SAGE Open, 5(4), 2158244015621114.
14. Schultz, T., & Correia, A. P. (2015). Organizational support in online learning environments: Examination of support factors in corporate online learning implementation. International Journal on E-Learning, 14(1), 83-95.
15. Zainab, B., Awais Bhatti, M., & Alshagawi, M. (2017). Factors affecting e-training adoption: an examination of perceived cost, computer self-efficacy and the technology acceptance model. Behaviour & Information Technology, 36(12), 1261-1273.
16. Topal, A. D. (2016). Examination of University Students' Level of Satisfaction and Readiness for E-Courses and the Relationship between Them. European Journal of Contemporary Education, 15(1), 7-23.
17. Shukor, N. A., Tasir, Z., & Van der Meijden, H. (2015). An examination of online learning effectiveness using data mining. Procedia-Social and Behavioral Sciences, 172, 555-562.
18. Phirangee, K., & Malec, A. (2017). Othering in online learning: an examination of social presence, identity, and sense of community. Distance Education, 38(2), 160-172.
19. Tarhini, A., Hone, K., Liu, X., & Tarhini, T. (2017). Examining the moderating effect of individual-level cultural values on users' acceptance of E-learning in developing countries: a structural equation modeling of an extended technology acceptance model. Interactive Learning Environments, 25(3), 306-328.
20. Mohammadi, H. (2015). Investigating users' perspectives on e-learning: An integration of TAM and IS success model. Computers in Human Behavior, 45, 359-374.
21. Rui, Z., Tiangang, W., Zhihuai, S., Zhongqiang, N., & Mu, G. (2018, May). Using E-Learning to Meet the Challenge of College Entrance Examination Reform in Iran. In Proceedings of the 2018 International Conference on Distance Education and Learning (pp. 44-48). ACM.
22. Trelease, R. B. (2016). From chalkboard, slides, and paper to e-learning: How computing technologies have transformed anatomical sciences education. Anatomical sciences education, 9(6), 583-602.
23. Van Nuland, S. E. (2017). Examination and Assessment of Commercial Anatomical E-Learning Tools: Software Usability, Dual-Task Paradigms and Learning.
24. El-Ebiary, Y. A. B., Al-Sammarraie, N. A., Al Moaiad, Y., & Alzubi, M. M. S. (2016, October). The impact of Management Information System in educational organizations processes. In e-Learning, e-Management and e-Services (IC3e), 2016 IEEE Conference on (pp. 166-169). IEEE.
25. Azeta, A. A., Inam, I. A., & Daramola, O. (2017, March). Developing e-examination voice interface for visually impaired students in open and distance learning context. In Information Communication Technology and Society (ICTAS), Conference on (pp. 1-6). IEEE.

Retrieval Number:F10360476S519/19 ©BEIESP

Published By:
Blue Eyes Intelligence Engineering
& Sciences Publication