WJCMS

Wasit Journal of Computer and Mathematics Science

Journal Homepage: https://wjcm.uowasit.edu.iq/index.php/WJCM

e-ISSN: 2788-5879 p-ISSN: 2788-5879

The Quality of Interactive E-Learning for Students to understand the Course Material

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DOI: https://doi.org/10.31185/wjcm.56

Received: May 200; Accepted: July 2022; Available online: September 2022

ABSTRACT: E-learning is the acquiring of information that takes place through electronic devices and media, also known as online learning or electronic learning. E-learning can be understood as "learning is enabled electronically". Typically, online learning is conducted online. E-Learning typically occurs in the form of online courses, online degrees or online programmes. Online learning has many benefits over in person classes. These include students being able to undertake and study using self-paced learning and the opportunity to choose their study environment. This leads to low expenditure, low staff training, and low capital outlay. All these factors prove that e-learning will perform well in terms of business growth and development. Over the long-term, worldwide e-learning market is expected to grow significantly from $107 Billion in 2015 to $325 Billion in 2025. E-learning forces learners to concede some of their privileges. Higher cheating rate, peer pressure, and lack of skill development for online students are some challenges that need to be dealt with. This work integrates the usage patterns and reviews on the quality factors of e-learning based course materials for effectual outcomes in the academia.

Keywords: ELearning, Quality of Course Material, Quality Dimensions of ELearning

1. INTRODUCTION

Many definitions of e-learning have been given by educational theorists in the world. In order to get a more comprehensive illustration of the various meanings of e-learning, let's review some examples that can be referenced from other academic institutions or educational researchers [1].

Sarah Guri-Rosenbilt from the Open University of Israel has exposited that 'distance education' and 'e-learning' are not the same thing. She defined e-learning as ways of acquiring study material and knowledge through computer multimedia technologies [2].

E-learning is the transfer of learning processes through various electronic media [3]. Arkorful and Abaidoo define e-learning as using information and communication technologies to enable access to online teaching and learning resources [4].

The definition of E-learning is using Internet to enhance knowledge and performance. Taking advantage of the Internet technologies enables the individual to build their own educational curriculums outside of the traditional classrooms [5]. E-Learning is widely used for educational purposes [6]. E-learning is used in a variety of situations, there is not just one use of it [7].

For adults, going online is much simpler than conventional education because adults can do a lot online [8, 9]. Online learning allows them to learn at their own pace, to submit work and complete assessments. Adult learners benefit from this flexibility because it enables them to do a number of things at once [10].

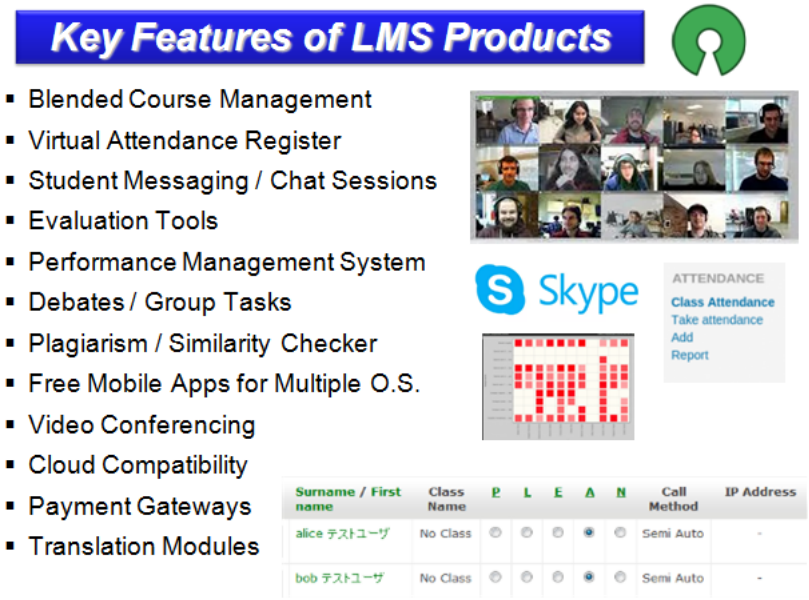

FIGURE 1. **Features in LMS and E-Learning Suites**

2. CORPORATE AND ACADEMIC USAGE

Corporations use e-learning to boost the knowledge, skills, and productivity of their staff while also reducing the cost of training employees. In the past, different companies like Toyota, Shell, PayPal, Lyft have had success in applying e-learning.

In most ways, e-learning has become an effective tool to help gain experience and skill in certain fields. Aside from learning courses available on the internet, there are “career track” online training courses which will guarantee job placement for their alumni after their graduation [11].

Universities will be able to offer more fully online courses than ever before. There are many accredited online colleges that offer online degree programmes, and there are more to be provided. E-Learning degrees enable universities to increase enrollments due to the flexibility provided by the internet and working personnel limitations. This allows universities to become more global than ever before because of E-learning. Higher education institutions with proper access to digital materials will be most financially successful [12].

The growth of online learning will remain exponential. As more companies and schools acknowledge the importance of online learning, it’s only a matter of time before its impact on society continues to increase. Online learning has numerous educational uses and the future role in education will be enormous. Educational institutions in the highest ranking in the world have already acknowledged online learning can have dramatic impact on people, teaching, and knowledge.

Although this is magnificent, we should not be overhasty. Online education has become very popular since the recession. The rate of growth in online education platforms is especially fast. Online learning is appropriate to various individual students’ different style [12].

There’s no room for argument that we’re in the beginning stage of new education era. What is currently online learning will not be in comparison to what is to come with online learning, in the future. The best tool for conducting courses at home or in groups is e-learning. The schools which use E-learning technologies are the ones that have left traditional teaching techniques behind [13].

It is to say that utilising technology in teaching and learning is a crucial matter. It is generally believed that the human brain can easily recall and store visual information. It is a finding that pictures are better recall method than words. Various industries, including farming, medicine, education, commercial and governmental agencies are adapting and using e-learning techniques [14].

Technological innovations were not achieved by lecturers. There has been very little consultation between educationalists who wish to use, and those who do. Technology for education is often under political consideration when making decisions to purchase. Much of training staff to use communication tools greatly improved teacher’s confidence in their use of technology, but many teachers stated that there was dissatisfaction in the instructional method and teaching material [15]. Problems with technology in online training, a lack of hardware, poor monitoring of teacher progress, and

a lack of support by online tutors are some of the things that have been seen in asynchronous training [16].

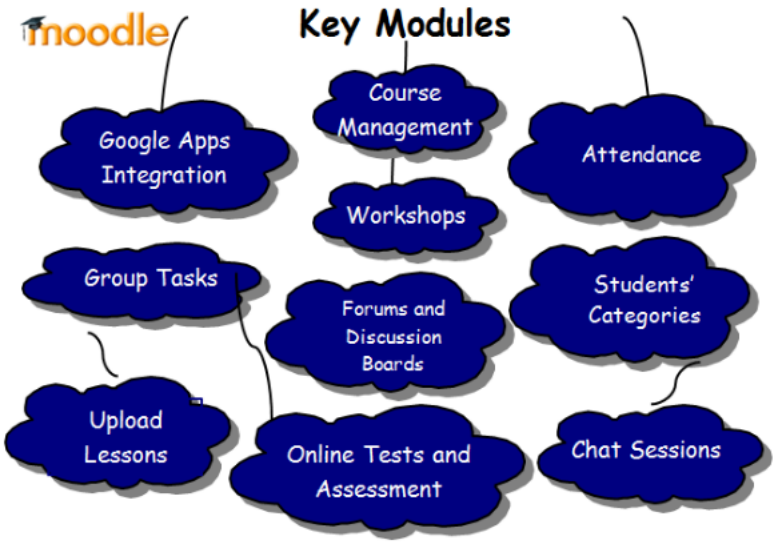

FIGURE 2. Key Modules in MOODLE LMS

This work states that newer generation web 2.0 services provide readily-customizable, highly inexpensive platforms for authoring and disseminating multimedia-rich e-learning courses; do not require specialised IT support [17]. Assessment of online participation is based on pedagogical method [18].

3. QUALITY FACTORS OF E-LEARNING AND STUDY MATERIAL

In the last few decades, the popularity and growth of the EdTech industry have continuously increased. The growing demand in businesses and university sectors, the digital revolution, quick mobile and tablet access to study materials, and the government initiative to fund some research and development projects relating to academics [19].

The India growth rate on eLearning is estimated to be around 25 percent over the year, with revenues of $1.96 billion dollars by 2021. It has been estimated. Not surprisingly, in India many eLearning developer companies have the opportunity to create digital eLearning software. When eLearning content development for eLearning course materials takes place, some crucial factors must not be overlooked to increase their worldwide reach. Before developing any eLearning content, it is essential to take into account these important factors. The following are 7 tips for successful eLearning material:

Some 1.5 million schools and nearly 18,000 institutes of higher education exist. However there is a lack of highly skilled and experienced teachers in some schools and institutions in India who can teach students with various teaching methodologies and real-life examples. Thus, this is the most critical factor to be considered in the development of an eLearning course in India [20].

It is a well-known fact that before a monthly subscription people compare various eLearning resources. It is therefore not enough to make the development of eLearning content informative and textually relevant. Unless the content is made attractive, lively, fun, and engaging, the eLearning course material may fail to become a big hit among the masses. In this way, 3D animation, simulations, games and quizzes are integrated in eLearning, which helps to make content fascinating [21].

Another important factor in the development of eLearning material is the use of a user-friendly interface. An interface that makes access to content easy and easy is a great advantage for a digital learning database [22]. According to Stanford's report, a website is confidential for 46.1 per cent of users, based on its aspect, i.e. layout, colour, etc. For example, customised eLearning programme features like voice search, simple navigation, visual attraction, visual consistency, simple to understand content layout, appropriate colouring, striking themes and proper font size should be integrated with eLearning courseware [23, 24].

Learners choose to pay for content that is simple, relevant and informative. Therefore, the development of e-learning content should not be monotonous or passive, but should encourage students to complete the work.

The eLearning content should be designed to provide students with logical and structured learning paths for the

development of educational content and company content. It is logical that the main course should be subdivided into several courses, depending on the time of study available for the course. This structured and organised path provides students with a clarity about which course they first have to complete and helps to define the path to a certification. For instance, learning Excel in its entirety can involve a basic Excel courses, a progressive course and finally a programme of certification.

4. RESEARCH METHODOLOGY AND DIMENSIONS

According to a report, worldwide 253 million are affected. Of that, 253 million are blind, 36 million and 217 million are visually impaired, with moderate to severe seriousness. In India, it is estimated that 62 million people are affected by some kind of vision disability. An eLearning platform should therefore have an accessible UI which makes its learning process simple and efficient for visually impaired persons.

A student performance analysis is conducted on a regular basis on the reviews from faculty and administrators. The performance should be based on various parameters, such as chapter completion, time understanding, project work, and test results.

The presented work is having the data analytics from the academic segment in terms of their reviews and contentment levels with the course delivery and e-learning suites.

5. RESULTS AND ANALYSIS

The data analytics is done from the reviews of academics including faculty members and students. With the evaluation using statistical tools and data science, the overall feedback and reviews are quite effectual in favor of the quality aware course material.

Table 1. Reviews on Course Content by Academia

Respondent	Type	Expectation	Contentment
Respondent-1	Professor	90	98
Respondent-2	Professor	89	95
Respondent-3	Student	78	94
Respondent-4	Student	96	97
Respondent-5	Student	95	84
Respondent-6	Professor	93	94
Respondent-7	Professor	90	84
Respondent-8	Student	92	94

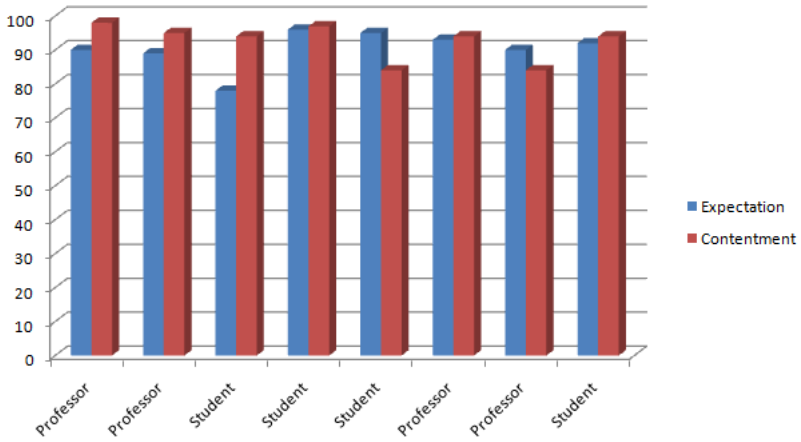

FIGURE 3. Reviews on Course Content by Academia

With the analytics, it is found that the course material quality expectations are quite high and there is huge scope of work in this segment by the organizations.

6. CONCLUSION

Products and services driven by technology have been used by the academy in the last 10 years to boost the conventional education system and increase the educational model worldwide and have become very popular throughout the world. As in the 2009 Bersin et al. report, LMS represents a market of $860 million comprising over 60 different providers in the field of learning management systems. The universities and colleges use the virtual learning environment or learning management systems to manage courses and to share the contents with students for a course that usually takes several weeks and meets several times during those weeks. The course can be much shorter in the business world, completed in one instructor-led session or online. The software industry has hundreds of software applications to deliver virtual learning in academia, and thousands of open source and proprietary software modules for delivering and managing instructor-lead synchronous and asynchronous online training based on the methodology of object learning are available. This article illustrates the utilisation of virtual learning technologies to improve higher education activities. The work shows the study and experiments that can be carried out via well-known learning management systems.

FUNDING

None

ACKNOWLEDGEMENT

None

CONFLICTS OF INTEREST

The author declares no conflict of interest.

REFERENCES

[1] A. K. Agariya and D. Singh, "e-Learning quality: Scale development and validation in Indian context," *Knowledge Management & ELearning: An International Journal*, vol. 4, no. 4, pp. 500–517, 2012.
[2] N. F. Al-Mushasha and A. B. Nassuora, "Factors Determining e-learning Service Quality in Jordanian. Higher Education Environment," *Journal of Applied Sciences*, no. 14, pp. 12–12, 2012.
[3] E. Åström, "E-learning quality. Aspects and criteria for evaluation of e-learning in higher education. (Högskoleverkets rapportserie 2008: 11 R). Solna: Swedish National Agency for Higher Education," 2008.
[4] C. Bremer, "Enhancing e-learning quality through the application of the AKUE procedure model," *Journal of Computer Assisted Learning*, vol. 28, no. 1, pp. 15–26, 2012.
[5] C. Ceobanu and L. Asandului, "A theoretical framework for quality indicators in elearning," *Turkish Online Journal of Distance Education*, vol. 10, no. 4, 2009.
[6] K. I. Clements and J. M. Pawlowski, "User-oriented quality for OER: understanding teachers' views on re-use, quality, and trust," *Journal of Computer Assisted Learning*, vol. 28, no. 1, pp. 4–14, 2012.
[7] I. Dobre, "An Overview of the Most Important Aspects Related to Quality Assurance in Computer Supported Collaborative E-Learning," *International Journal of Computer Science Research and Application*, vol. 2, no. 1, pp. 25–30, 2012.
[8] U. D. Ehlers and J. R. Hilera, "Special Issue on quality in e-learning," *Journal of Computer Assisted Learning*, vol. 28, no. 1, pp. 1–3, 2012.
[9] S. A. Gamalel-Din, "Smart e-Learning: A greater perspective; from the fourth to the fifth generation e-learning," *Egyptian Informatics Journal*, vol. 11, no. 1, pp. 39–48, 2010.
[10] R. Cheung and D. Vogel, "Predicting user acceptance of collaborative technologies: An extension of the technology acceptance model for e-learning," *Computers & Education*, vol. 63, pp. 160–175, 2013.
[11] M. J. Iqbal and M. Ahmad, "Enhancing Quality of Education through E-learning: The Case Study of Allama Iqbal Open University," *Turkish Online Journal of Distance Education*, vol. 11, no. 1, pp. 84–97, 2010.
[12] M. Z. Iqbal, M. W. Maharvi, S. A. Malik, and M. M. Khan, "An Empirical Analysis of the Relationship between Characteristics and Formative Evaluation of Training," *International Business Research*, vol. 4, no. 1, pp. 273–286, 2011.
[13] A. K. M. N. Islam, "Investigating e-learning system usage outcomes in the university context," *Computers & Education*, vol. 69, pp. 387–399, 2013.
[14] S. Jayakumar, S. Manimaran, and M. Gopianand, "Analysis of e-learning in business and tools for improving the effectiveness of the educational system," *International Journal of Computer Science and Mobile Computing*, vol. 2, no. 5, pp. 109–113, 2013.
[15] I. Jung, "Asian Learners' Perception of Quality in Distance Education and Gender Differences. The International Review of Research in Open and Distance Learning," 2012. 13.
[16] D. L. Kirkpatrick and J. D. Kirkpatrick, "Implementing the four levels. A Practical Guide for Effective Evaluation of Training Programs," 2007.
[17] R. Lai and N. Sanusi, "Improving Higher Education Student Learning through a Table of Learning," *Creative Education*, no. 07, pp. 150–157, 2013.
[18] Y. C. Liu, Y. A. Huang, and C. Lin, "Organizational Factors' Effects on the Success of E-Learning Systems and Organizational Benefits: An Empirical Study in Taiwan," *The International Review of Research in Open and Distance Learning*, pp. 13–13, 2012.
[19] S. Marshall, "Improving the quality of e-learning: lessons from the eMM," *Journal of Computer Assisted Learning*, vol. 28, no. 1, pp. 65–78, 2012.
[20] D. Masoumi and B. Lindström, "Quality in e-learning: a framework for promoting and assuring quality in virtual institutions," *Journal of Computer Assisted Learning*, vol. 28, no. 1, pp. 27–41, 2012.

[21] C. Meier, S. Seufert, and D. Euler, “Quality assessment and development in the course of the EFMD CEL programme accreditation,” *Journal of Computer Assisted Learning*, vol. 28, no. 1, pp. 52–64, 2012.
[22] M. Misut, K. Pribilova, M. Orolinova, and K. Kotulakova, “Quality of Education Improvement through Adapted Kirkpatrick Evaluation Model,” *Advances in Education Research*, vol. 44, pp. 109–114, 2013.
[23] R. Oliver, “Quality assurance and e-learning: blue skies and pragmatism,” *Alt-J*, vol. 13, no. 3, pp. 173–187, 2005.
[24] E. Ossiannilsson *Findings from European Benchmarking Exercises on E-Learning: Value and Impact. Creative Education*, vol. 2, pp. 208–219, 2011.