

A Study on the Impact of Learning Management Systems on Students of a University College in Sultanate of Oman

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Abstract

Sultanate of Oman is one of the great countries in the Middle East with rapid progress in education with advanced teaching and learning technologies. The University colleges in Oman have introduced the latest e-Learning Management Systems in order to keep the pace of the technological revolution in the field of higher education. However, it is very important and essential to find out the impact of e-Learning Management Systems in the University colleges. Since the researcher is associated with Muscat College, the study has been conducted at Muscat College to evaluate the impact of e-learning technology. This paper examines what impact LMS has made on students and how effectively LMS has influenced students on their academic activities. A questionnaire was prepared in the academic year 2008-09 and circulated to the students enrolled for various Bachelor (Honours) degree courses of affiliated partner, University of Stirling, UK. The result of the survey was a matter of concern. Hence, the researcher has decided to continue the research in the academic years 2009-10 and 2010-11 in order to find out the real impact of the LMS on the students in the college.

Keywords: *e-learning, LMS, impact, effectiveness, Internet, technology.*

1. Introduction

A learning management system (LMS) is a set of software tools for delivering, tracking and managing online training and education. LMS options range from systems for managing training records to more flexible software for distributing courses over the Internet and offering features for online authoring. In some instances, corporate training departments purchase an LMS to automate their record-keeping as well as to allow registration of employees for classroom and online interactive courses.

Key features may include student self-service, self-registration, instructor-led training, skill groups management, user notifications and deadlines, manager

hierarchies, wait-list management, and of course actual serving if the training material.

Also common in an LMS is an automated testing facility which records answers, grades tests, and keeps all data for later reporting and analysis. Optional LMS features may include a built-in authoring tool, chat boards, and discussion boards.^[1]

A learning management system (LMS) is a software application for the administration, documentation, tracking, and reporting of training programs, classroom and online events, e-learning programs, and training content.

LMSs range from systems for managing training and educational records, to software for distributing courses over the Internet with features for online collaboration. Corporate training use LMSs to automate record-keeping and employee registration, Student self-service (e.g., self-registration on instructor-led training), training workflow (e.g., user notification, manager approval, wait-list management), the provision of on-line learning (e.g., computer-based training, read & understand), on-line assessment, management of continuous professional education (CPE), collaborative learning (e.g., application sharing, discussion threads), and training resource management (e.g., instructors, facilities, equipment), are dimensions to Learning Management Systems.^[2]

A learning management system (LMS) is a software application or Web-based technology used to plan, implement, and assess a specific learning process. Typically, a learning management system provides an instructor with a way to create and deliver content, monitor student participation, and assess student performance. A learning management system may also provide students with the ability to use interactive features such as threaded discussions, video conferencing, and discussion forums. The Advanced Distance Learning group, sponsored by the United States Department of

Defense, has created a set of specifications called Shareable Content Object Reference Model (SCORM) to encourage the standardization of learning management systems.^[3]

2. LMS in Higher Education

Learning Management Systems are used all over Higher Education Institutions (HEI) in the world and the need to know and understand its adoption and usage arises. On the one hand, there are different institutional cultures and characteristics and, on the other hand, there are several distinct LMS tools. Considering this it is expected to find out distinct experiences in the adoption and usage of LMS. The richness of each of the experiences can help the worldwide community to better understand how LMS are being used.^[4]

The most used LMS according to a survey conducted in 2009 answered by 51 universities from 19 different countries in 5 continents, were Moodle, Blackboard / WebCT, and Sakay. In that study several other LMS were referred such as ItsLearning, Desire2Learn, Claroline, METU Online, Chisimba, High Learn, Formare, Learning Space, First Class, Dokeos, eCollege, Class Fronter, KEWL.^[4]

The results can be seen as an evolution. In the past years, the proprietary platforms were the most used but currently there is an increase of open source free platforms usage. Consequently, there are not many studies regarding the usage level of such tools, concerning students, teachers, tools functionalities, usability, and the entire technological environment. Generally, both proprietary and open source free LMS provide several functionalities, such as, electronic distribution of course syllabi, grades and teachers feedback to students, ability to post hyperlinks to websites, forum for the exchange of ideas, wikis which allows students to swap ideas and information on projects, chat rooms for real time discussion, facilitating emailing and messaging among the participants (teacher/students, students/students), facilities for students to submit work assignments electronically, the means to administer quizzes and texts online. It is frequent to observe that despite LMS on HEI is offered and usage stimulated, only a few of those functionalities are adopted, either by teachers, or by students.^[4]

3. LMS in Sultanate of Oman

Sultanate of Oman, being a developing country, has gone through many social changes that have, in turn, altered the Omani society needs. Technology, on the other hand has exerted a tremendous impact on the Omani societal setting and contributed to even more needs.

The social demand to increase the higher education intake is obvious. Taking in consideration that these graduates

are well tuned to recent technological development, may contribute to alleviate this problem through instituting a quality technology enriched distance and electronic learning system where the higher education institutions could admit certain number of students using this delivery method.

The Internet and other forms of e-Learning platforms are being introduced and diffused into the Omani educational system for teachers and faculty members go online.

Versions of learning management systems such as WebCT, Moodle, and e-portals have been implemented at many educational institutions.^[5]

Overall, e-Learning is rapidly becoming an essential component of Oman's educational process and brings with it the most significant changes since the introduction of the printing press. With its rapidly growing workforce of adaptable and well educated graduates, Oman could have a unique role to play with e-Learning in the region. In a similar manner to its success in capturing a regional lead in call centers, Oman may be able to position itself as a leader in developing and providing high quality e-Learning material with a true flavor of Arabic culture.^[6]

As per 'Oman Observer' dated on 7th June 2011, the success in introducing the system of e-learning through ambitious systems like Blackboard Learning and Blackboard Community, the Colleges of Applied Sciences (CAS) has decided to upgrade and introduce the new version of Blackboard Learning in all the six colleges in Oman. The e-learning system is an ambitious project of the Ministry of Higher Education aimed at providing the students and staff of the colleges the best possible e-learning solutions. This was stated by Mohammed Rashid al Maamari, Assistant General of Colleges at CAS, in an interview with the Observer. "We successfully introduced Blackboard Learning and Blackboard Community systems about two years back and now coming up with the new version of the Blackboard Learning known as Blackboard Learn, Release 9.1," said Al Maamari. "The objective is aimed at providing a centralized learning ground for all the students and staff of the colleges with upgraded facilities. Under the system all the students can log on to the e-learning system from the college, from the cyber cafes as also from their home," he said. Blackboard's most popular solution is course management systems called the Blackboard Learn System. It is used successfully by thousands of schools for supplementing face-to-face learning and for providing complete distance learning. Giving students the flexibility of new forms of collaborations, easier and private self-assessment, and the ability to do group projects with less face-to-face time is

empowering to faculty and students – driving student success.

Blackboard Learn, Release 9.1 provides the users with an exciting step into next generation teaching and learning platform. Release 9.1 focuses on fostering student engagement and supporting educator efficiency. "Blackboard Learn Release 9.1 has exciting new social learning and teaching tools that foster more logical, visually impactful, and active learning opportunities for students, helping them stay connected to their educational experience 24 hours a day," Maamari said. Its key features include, Blogs, Wikis and Journals that help promote active collaboration; Mashups, which has integrate visually engaging content; Groups that has ability for enhanced group collaboration and Blackboard Learn Toolbar that aids in powerful and relevant searches. Besides, Blackboard Scholar is an academic bookmarking tool; Accessibility gives better accessibility; Blackboard Connect keeps students connected and Blackboard Mobile is a mobile learning concept. The MoHE has entered into an agreement with the Edutech Middle East to provide technology-enabled information and learning solutions to the colleges located in Sur, Ibri, Sohar, Rustaq, Nizwa and Salalah.^[7]

4. LMS in Muscat College

Muscat College is one among the top private university colleges in the Sultanate of Oman. Muscat College was established in 1996 as a private academic Omani institution of higher education. Muscat College is accredited and operates under the supervision of the Ministry of High Education in Oman. Muscat College is affiliated with both the University of Stirling and The Scottish Qualification Authority (SQA) UK.^[8]

Muscat College offers the following programmes in affiliation with University of Stirling.

1. B Sc (Hons) in Business Computing
2. B A (Hons) in Business Studies
3. B A (Hons) in Accountancy and Business Studies
4. B A (Hons) in Accountancy and Computing Science

The duration of each programme is of 4 years. The first batch had enrolled in 2007-08 and they have successfully completed in 2010-11.

Muscat College uses the e-Learning Management System, Blackboard-WebCT, of University of Stirling. The students from Oman are enrolled to University of Stirling through Muscat College. They attend classes and appear for examination at Muscat College. However, the syllabus,

schedule, materials and examination papers are prepared by University of Stirling. The final examinations are conducted at Muscat College using the same question paper(s) set and used by University of Stirling at the same time of UK (even if the day scheduled for the examination is a holiday in Oman). The answer papers are evaluated at Muscat College and sent to University of Stirling for verification and approval from the examination board at the University of Stirling. The results are published and the Degree is awarded by University of Stirling. Muscat College students can even attend classes at University of Stirling. There are modules in the course where tests and/or examinations are conducted online using WebCT at the same time at Muscat College and University of Stirling, UK. The University of Stirling has provided user name to all Muscat College students and academic staff for accessing WebCT and e-mail system. The academic staff needs prior approval from University of Stirling to deliver the modules of honours programme. All the approved academic staff would get administrative rights in the WebCT to upload files, if necessary, of the modules being delivered.

The researcher is associated with Muscat College for the past eleven years and delivering courses using Blackboard-WebCT. The researcher felt the necessity of studying the impact of LMS on students' performance. The first survey study was conducted in the academic year 2008-09 and continued the study on the students of academic years 2009-10 and 2010-11.

5. Survey Study Findings

The survey asked 25 questions to evaluate the impact of Learning Management System among the first, second, third and fourth year of bachelor (honours) degree students.

Table 1 below shows the total number of students in the college and number of students responded to the survey in each academic year.

Table 1: Number of students responded in the survey

Academic Year	Total Students	Students Responded	Percentage
2008-09	168	115	68.45
2009-10	206	163	79.12
2010-11	205	172	83.90

Muscat college has a majority of female students and the majority of the students responded to survey was also female. Hence gender wise result analysis is not done.

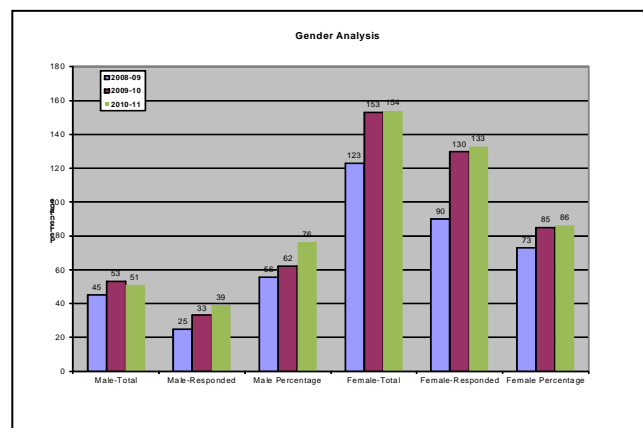


Fig. 1 Gender analysis of responded students.

The important findings from this survey study are given below in this section.

5.1 Internet Access

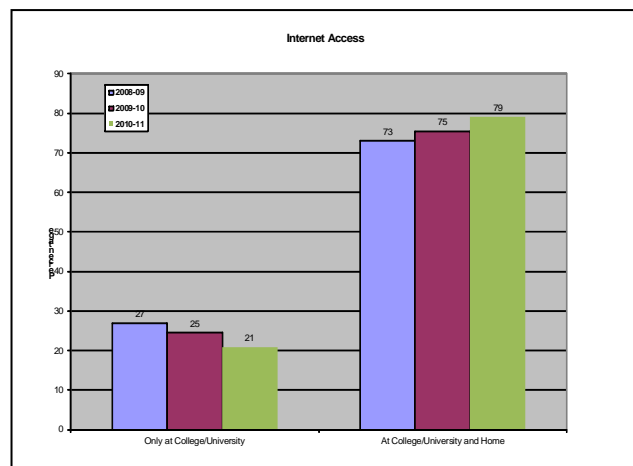


Fig. 2 Availability of Internet to students.

The study clearly shows that majority of the students have access to Internet at home as well. Fig 2 clearly shows the steady growth in the availability of Internet at home so that students can use LMS whenever they wish to do.

5.2 Frequency of Using LMS

The study revealed that students of academic year 2008-09 were not using LMS quite frequently. However, the students' usage frequency has been improved in the academic years 2009-10 & 2010-11 (see Fig. 3).

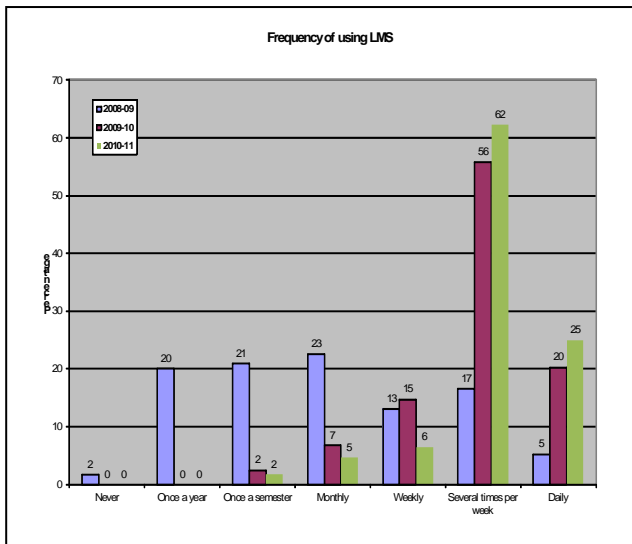


Fig. 3 LMS usage.

The study conducted on 2008-09 has identified that the students were not very much aware about the advantages of using LMS. Therefore, Muscat College staff has given basic training to all the students for using LMS on the modules taught by them in the first semester of 2009-10. This was well attended by the students. Therefore, Muscat College has arranged two days' work shop on Blackboard-WebCT for both students and staff. Mr. Simon Booth, IT Administrator of University of Stirling, UK has conducted the work shop on 25th & 26th of October 2010 at Muscat College. The work shop was very useful and effective for both students and staff.

5.3 Convenience of Course Activities

The maximum number of students has felt that course activities are more convenient while using LMS. 72% of the students have either agreed or strongly agreed to this in the academic year 2008-09. 89% of the students have either agreed or strongly agreed in 2009-10 and an overwhelming 93% of the students have either agreed or strongly agreed in 2010-11. This is the clear indication of

the good outcome of using LMS at Muscat College (see Fig. 4).

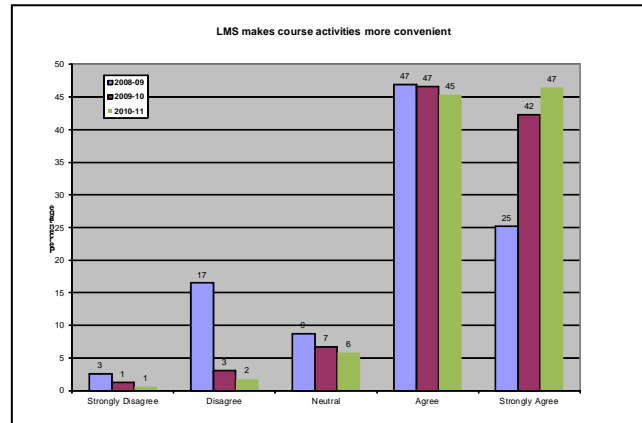


Fig. 4 Course activities more convenient with LMS.

5.4 ICT Services

Muscat College has got latest state-of-the-art IT infrastructure with eight servers (Domain controller, Mail, Database, ISA-Proxy, Backup, Antivirus administration and two File servers), 14 laboratories with 400 computers. All the labs are equipped with projectors and few of them with smart boards too. The computer student ratio is 1:3. There are labs exclusively for honours degree project students and foundation IT students.

The students have responded very positively about IT services of Muscat College. 59% of the students have either agreed or strongly agreed to this in the academic year 2008-09. 91% of the students have either agreed or strongly agreed in 2009-10 and an overwhelming 93% of the students have either agreed or strongly agreed in 2010-11 (see Fig. 5).

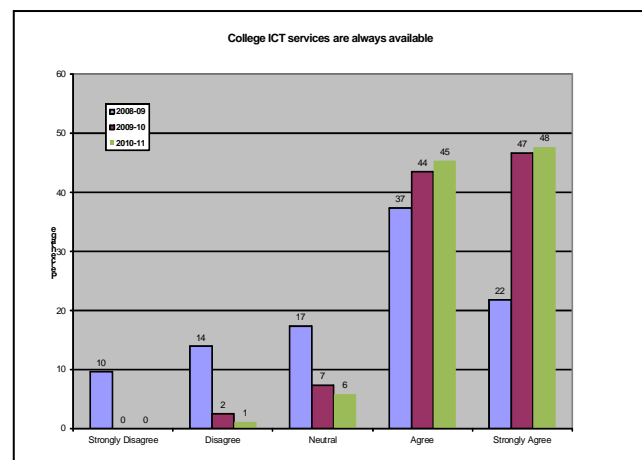


Fig. 5 Availability of ICT services.

5.5 Learning Skills

There is a clear indication of the improvement in the learning skills of the students after they have started using LMS properly. In the academic year 2008-09 there were only 66% of the students have either agreed or strongly agreed to this. However, after the training given to the students by the staff in 2009-10, 86% of the students have either agreed or strongly agreed in 2009-10. After the LMS workshop, given by Mr. Simon Booth in October 2010, 91% of the students have either agreed or strongly agreed having improved their learning skills in the academic year 2010-11 (see Fig. 6). This result clearly shows the positive impact of LMS on students.

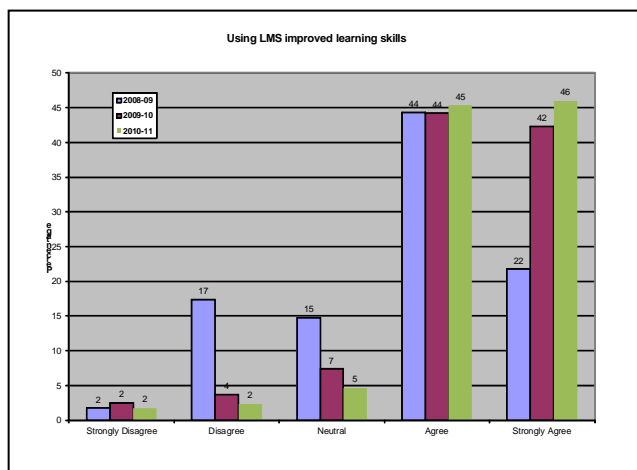


Fig. 6 LMS and learning skills.

5.6 Experience of Using LMS

The overall experience of using Blackboard-WebCT is rated as very good by the majority of the students. The responses from the students are in similar pattern of the above characteristics for the academic years 2008-09, 2009-10 & 2010-11. It clearly shows very good improvement from 2008-09 to 2009-10 and it continued in 2010-11.

In 2008-09, only 48% of the students were either positive or very positive to the experience and 31% of the students were neutral. In 2009-10, 86% of the students were either positive or very positive. In 2010-11, 88% of the students were either positive or very positive (see Fig. 7).

It should also be noted that there were 20% of the students rated as either negative or very negative to the overall experience of using LMS in 2008-09. This negative rating has been successfully overcome and just 3% of the students have rated as either negative or very negative in

the academic years 2009-10 & 2010-11. There must be special attention paid to those 3% of the students who have rated as negative to find out the reasons and overcome their difficulties.

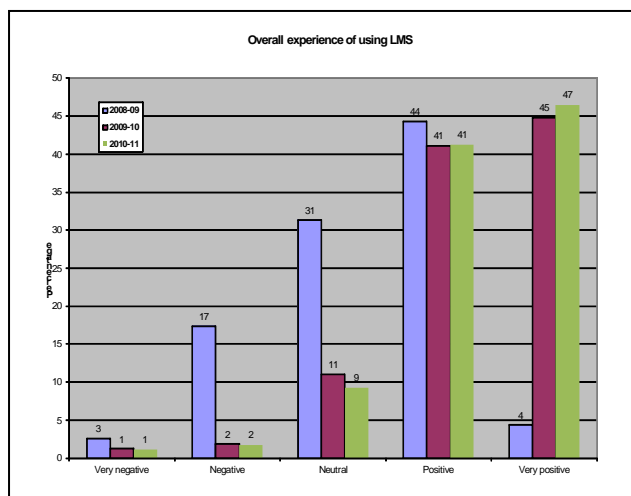


Fig. 7 LMS experience.

5.7 Students Retention

Muscat College enjoys an excellent retention rate of the students at present. New students are admitted in the month of September each year as academic year starts from 1st week of September. Students are admitted to University of Stirling programme after the successful completion of the foundation programme with IELTS score of 6.0 from Muscat College. Students those who have completed foundation programme from other colleges are admitted after passing the admission test of IT, Maths and IELTS score of 6.

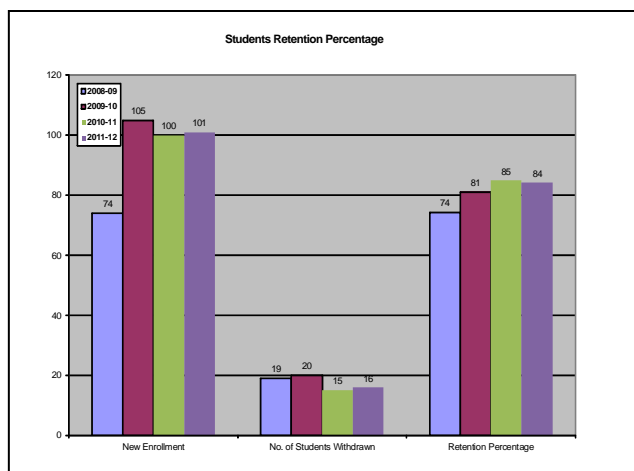


Fig. 8 Retention rate of students.

Muscat College admits about 100 new students for University of Stirling programme in each academic year in addition to SQA programme and Foundation programme. There may be few students withdrawing from the University of Stirling programme and join the SQA programme. Similarly, few students may withdraw and join other colleges also.

The researcher has made an attempt to find the retention rate and established a link between LMS and retention rate. In 2008-09, the retention rate was 74%. In 2009-10, the retention rate was 81%. In 2010-11, the retention rate was 85%. In 2011-12 (after semester 1), the retention rate was 84%. The study has shown that students have started using LMS efficiently from 2009-10 onwards and retention rate is also high since 2009-10.

6. Conclusions

The study clearly shows the positive impact LMS on students. Although the response from the students of academic year 2008-09 was not that encouraging due to lack of awareness of the advantages of using LMS. The training given to the students on LMS has been very successful and majority of the students have responded very positively in the academic years 2009-10 & 2010-11.

The frequency of using LMS has been good. The students have felt that course activities have become more convenient. Students learning skills have been improved. Muscat College ICT services are found to be efficient. Overall the majority of the students have had very good experience in using LMS.

The impact of LMS is also visible in the student's retention rate. Past three academic years, the retention rate average is 83%. It is consistent since 2009-10. The retention rate was 74% in 2008-09.

The research study concludes by stating that Learning Management Systems has been very beneficial to the students at Muscat College.

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