

Proposed Hybrid System of Electronic Learning and Content Management Systems for Higher Education: Case Study Blackboard and MARZ Systems at King Abdulaziz University.

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ABSTRACT

The continuous enhancing process of E-learning and distance learning education is a vital step for the higher education sector. The objective of this paper is to work on a proposed system integrated between a learning management system (Blackboard) and a content management system (MARZ) available at King Abdulaziz University, in Saudi Arabia. A survey was developed and distributed to students enrolled in distance learning education and students in regular education. The results acquired in this study will be used for additional study and expanded for the general adoption of additional students for an integrated E-learning system.

(Keywords: learning management system, Blackboard system, content management system, MARZ, integrated E-learning system)

INTRODUCTION

E-learning is considered as an important factor in enhancing higher education, and its significance has steadily grown in recent years. The higher education sector uses learning management systems in supporting the E-learning process (Babo and Azevedo, 2012). The quality of experience and its effect on collaborative learning and higher-level learning skills is one of the main issues that should be taken into consideration in evaluations of E-learning (Haughey and Anderson, 1998).

King Abdul-Aziz University (KAU) is considered by many as a leader in the Middle East region for using learning management systems. KAU continuously updates its learning management systems. The Blackboard system is the latest system used in E-learning at KAU. Students and

instructors realize the impact of this system on the education process in the university. Also most institutes of higher education concentrate on updates to their content management systems to keep in touch with students and publish all information about institution and ensure accurate and updated information.

According to Wayne and Chris (2003) WEB CMSs assist institutes in: streamlining and automation of content administration, implementation of web-forms-based content administration, distributing content management and control, creating reusable repositories, and building sophisticated content access and security frameworks. Selecting a CMS is considered a complex and difficult task. Institutes face several choices in implementing a CMS. Some prefer in-house systems and other prefer commercial-off-the-shelf (COTS) systems. KAU's web content staff created its own CMS in-house which is called the "MARZ" system.

The purpose of this study is to capture students' tendencies toward integrating the Blackboard Learning Management System (LMS) and "MARZ" Content Management System (CMS) available at King Abdul-Aziz University (KAU). A questionnaire was divided into three sections then delivered to 100 students who are involved in E-learning, especially distance learning, programs.

The captured data from questionnaire was analyzed using a well-known package called PLS and SPSS methodology. The results showed that the opinions about the learning management system (Blackboard) and content management system (MARZ) and the proposed system which is integration of the two systems. The populations of the study are students who registered in distance learning education. The acquired

results showed that there is a positive opinion toward adopting the idea of integrating learning system. So a model of an integrated system of learning management and content management system is proposed.

Learning Management Systems

Learning management systems can be defined as a web-based software platform that joins together applications built for optimally establishing distance learning. Also campus-based teaching systems can use learning management systems to give aid and to be complement with class learning system. There are many E-learning systems existing for use in much higher education at different universities such as: Blackboard, Moodle, and Tutor. Some of them are free-source and others are commercial. The main aim of applying a learning management system is to present instantaneous right of entry to watch and follow lessons and any announcements related to courses in order to decrease the delivery costs for each course and allow students learn at their own rate and to deliver knowledge with better reliability (Wayne and Chris, 2003).

Blackboard (Learning Management System)

Blackboard is content management software established for the purpose of educational aspect and used for teaching and controlling distance learning programs. Blackboard system was designed as a web server based platform. The main purpose of this system is to add online elements to the traditional courses and to develop online courses. The Blackboard Learning System gives the opportunity for professors to build courses, assign homework, and distribute videos for students. The instruction module is used for building online courses and allows teachers to publish various lessons prepared for students [1].

In the Blackboard tools professors can use for each course to send messages to students through course messages in inform them about any matter refer to the course and it is a way to communicate with students after lecture finished. The Blackboard system has announcements and through it the teacher can announce anything related to the course urgently and efficiently.

Professors can create assignments for students registered through the course and the period of

submitting assignment can be determined by professor. The discussion board in Blackboard considered as one of the important tools that can allow teachers to introduce an important topic for discussion and students can participate and give their opinion. Another important tool is the activities tool; through it professors can create tests for students in different types such as multiple choice, true and false and essay questions. Due date and the total marks can be defined by professors.

At the end of the training course, teachers can refer to another important tool in Blackboard which is called the total evaluation center. Through it, instructors can find the whole evaluation marks for assignment, activities and discussion board. Course content also is considered as one of the main parts of the Blackboard tool sets and through it instructors can upload the course content in different types such as item, file, picture, video, etc.

Finally, Blackboard also contains a virtual classroom. Through it, the instructor meets the student with a determined timetable of the class and the instructor start giving lectures by using a microphone and also chat with student through class. This feature is also with a webcam which can be used during class. The teacher can give and stop permission of any student through class such as sending messages using microphone, etc.

Students should attend the class in synchronization with the time table of the course so they can interact with instructor and in discussion through class. The process of evaluating the course and the instructor can be done through the Blackboard system and at the end of the semester; instructor can know his performance and evaluation in order to enhance the teaching process in the next semester.

Content Management System

A content management system (CMS) defined as a digital content that can be used for information search, browsing, access and retrieving by clients in a workgroup or enterprise (Chester, 2003). According to Lurie (2002), a CMS is comprised of three parts: (1) the content which consists of graphics, text, audio, video, etc. (2) the process which is comprised of a group of activities that considered as inputs then

processed and produce outputs, and (3) technology/software which is necessary to upload content on internet in order to contact with the users.

Robertson (2003) indicated that a CMS can support creating, saving, modernizing, distributing, and presenting information. CMS can be used in higher education to manage the following activities: monitoring course tasks workflow, uploading course content and submitting assignments. A CMS is considered as a part of software products which can be classified into three types according to the way they are designed:

1) In-house software development: In house software prepared inside the company to be suitable for company requirement. In this kind of software company can use its local resources such as experts of programming and use company computers in order to fulfill company requirement. The main disadvantage of this method is the high cost.

2) Software products under GNU-GPL license (General Public License). There is no charge or tax payment for using software which classified under GNU-GPL license, so software developers can modify new systems taking benefits from this advantage and the source code are available for free.

3) COTS: in this method ready software products developed and distributed to multiple users if they are bought a license. It is cheap when comparing to In-house software products but the main disadvantage of this method that the requirements are general and may be not fully agree with company requirements and may need some modifications.

Content Management System (MARZ)

KAU has created and initiated its own CMS called MARZ which is used as a website on the internet. CMS has been planned and developed depending on content management experience and offers KAU clients with an intuitive method in which to manage and market their websites and determine their online success. In MARZ, the contents of the site were indexing due to the international standards for search engines. The MARZ system contains many tools that particularly created to support the user. Instructors in KAU can upload

courses contents and syllabuses of different materials on MARZ website, so students can take benefits from these contents. Instructors also can upload any other files, announcement for students especially for the distance learning students.

Instructor's websites tools on MARZ support uploading files, photo album, instructor CV, favorite links, ads and researches. Also, it is concerned in automatic publishing of the contents on different search engines by means of programs library, which supports the well-known search engines. MARZ can support Arabic and English language. MARZ system is very easy for users to use, it doesn't need any programming or technical background, there are manuals uploaded on MARZ website and videos which describe the process of establishment of website.

According to (Husain, 2012) the MARZ content management system has the following capabilities:

- 1) Flexible content management editor: the editor allows user to publish text, images and video content with a few and easy steps.
- 2) Search engine optimized content and position reports: MARZ provides a friendly search engine, enabling users to customize Meta information at an individual page level.
- 3) Blogs and support for social networks: by this method the number of KAU website visitors can be increased and they can follow our business.
- 4) Real-time performance monitoring: MARZ CMS dashboard offers KAU user with a complete real-time summaries of KAU website activity. It can give the opportunity to analyze traffic on website such as: customer's locations, search engines, search Design and Maintenance Issues.
- 5) MARZ content management system in KAU contains the following services [12]:
- 6) MARZServices. which comprises of the following services: Site Services Management, Site Menu Management, Contacts Directory Management, FAQ, Photo Album Management, Favorite Site Management, Documents Management, Our Events, Questionnaires, Awards and Credits.

- 7) MARZ Guide. it include the following services: Evaluation Site Guide, Academic Staff Guide, Content Management Guide, Menu Management Guide, Visual Guide, Policy Deployment Guide , Moveable News Guide, Files Management Guide.
- 8) MARZ Reports: News Reports, Number of Academic Members, Availability, Repeated Research Statistics, Research Management, Site Statistics, Vote Management, Manual Evaluation Results, Task Reports, SMS Reports, Questionnaires Reports.
- 9) MARZ & Social Network: Facebook, Twitter, YouTube.
- 10) MARZ News: SMS Management, Related News, Latest News, Moveable News Management.
- 11) MARZ Management: User Management, Tasks Management, Access Page, Courses Management, Research Management, Authorization Management.

PROPOSED MODEL

Proposed model components are shown in Figure 1. The model consists of four components: learning management system Blackboard (LMS), instructor content management system (ICMS), college content management system (CCMS), and correlating system (CS).

Students interact with the proposed system through a unified interface, so students can directly access learning management system (Blackboard) and also can directly access instructor content management system (ICMS) in MARZ system and college content management system (CCMS) in the MARZ system. When students access the Blackboard system, they can access the lectures of each course in synchronization with the instructor, they can listen to the lecture and take part in it by text message chatting and by using microphone, also the students can do the tasks, exams, and forums through the blackboard system.

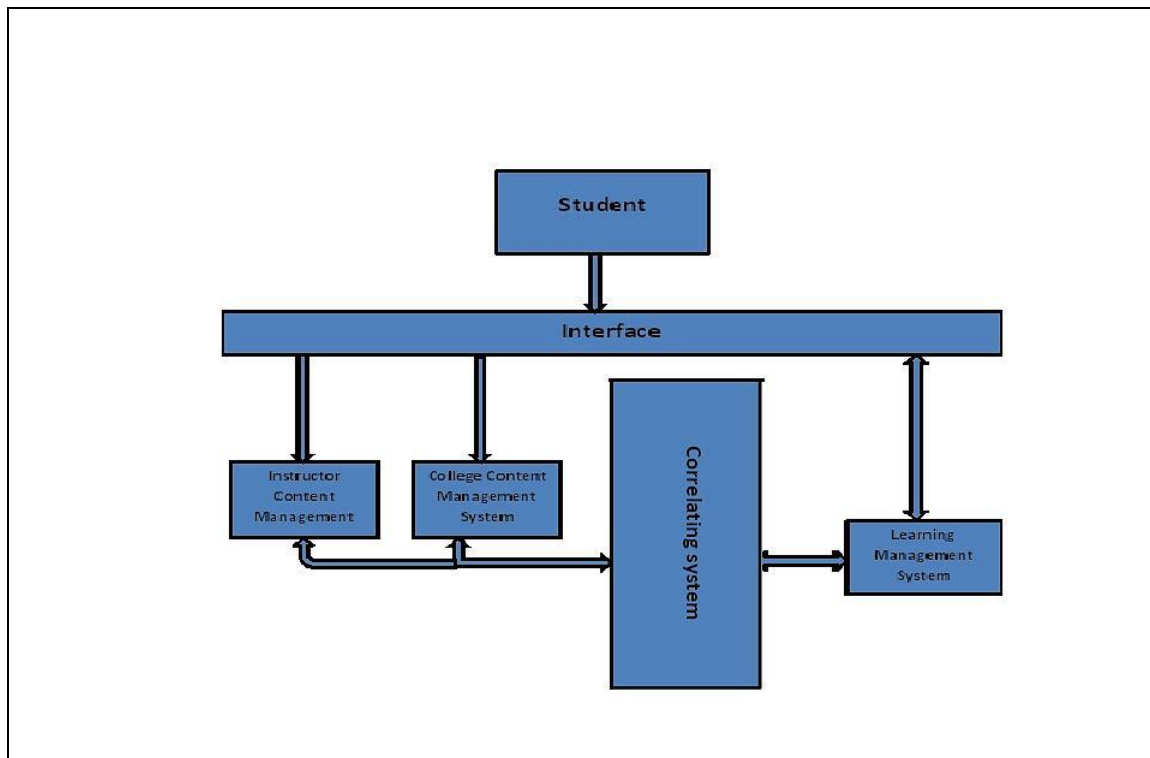


Figure 1: The Proposed Model.

In a proposed system students can access instructor website who teach a certain course through correlating system directly to download course content such as slides, syllabuses. Students also can access through the proposed system the college website that the assigned course belongs to, so the students can download courses syllabuses and monitor any announcements about distance learning courses, exams and any content related to the course.

QUESTIONNAIRES

According to Lanthier (2002) a questionnaire is a group of questions shared to a sample of people, with a reason of collecting information about the people's feelings, actions, faith, etc. about a definite subject. A survey has been made on KAU students. The questionnaire was to investigate the role of learning management system "Blackboard" and content management system "MARZ" in managing electronic and distance learning education in KAU.

The questionnaires can be designed into different kinds, as example self-administered questionnaires and interviewer administered questionnaires. The self-administered contains different type of data collection, for example internet-mediated questionnaires, delivery and collection questionnaires. The interviewer administered questionnaire comes in two kinds: telephone questionnaire and structure questionnaire. The questionnaire procedure has many benefits some of them are the privacy of the respondents is protected, low cost, survey can cover large number of population, and it depends on the statistical analysis which guide for easily comparison between results (Saunders et al., 2007).

Questionnaire Analysis

The aim of the first section of questionnaires is to capture information about the student such as gender, age, education level, type of education and the level of education year. The survey shows that 80% the sample gender was male, 70% of the sample age was above 24 years and the rest was age was from 18-23 years, 90% of the sample was distance learning education, 45 % of the sample was 4th year level, 20 % was third year, 20% was second year and 15 % was 1st year level of education.

The questionnaire in this research divided into twenty questions. The main purpose of the questionnaire is to investigate the role of learning management system "Blackboard" as separate system and content management system "MARZ" separate system then investigates the role of proposed hybrid system from both blackboard and MARZ. The questions included scale question, multiple choice and open ended questions.

Questions 1-12 discuss the features of the Blackboard system. The majority of the students (73%) and (90%) for Questions 1 and 2 agreed or strongly agreed that they have good experience in dealing with computers and agreed that learning management system contribute in enhancing education process. For Question 3, a majority of 81% agreed that training on Blackboard system was sufficient. A majority of 86% of students in Question 4 agreed that the Blackboard system has a good technology for enhancing university learning process.

Question 5 shows that 30% of students are following the Blackboard system each day, 25% of the students following the blackboard system each 2-3 days and 45 % of the students following the system weekly.

A majority of 75% the students agreed in Question 6 that the Blackboard system contents help in understanding the courses. In Question 7, a majority of 76% of students agreed that content of courses in the Blackboard system is suitable for learning in university. In Question 8, a majority of 78% of students agreed that the tests in blackboard system suitable for measuring the students' abilities in each course.

In Question 9, a majority of 83% agreed that tasks in blackboard system measure the level of students. In Question 10 majority of students agreed that forms helps in understanding the courses contents. A majority 72 % of students in question 11 agreed that there is interaction between students and teacher through microphone and text messages. In Question 12 a majority of 90% agreed that messaging system in blackboard system is an active way for interaction between teacher and students.

Questions 13-15 captured information about content management system "MARZ". In Question 13 a majority of 72% agreed that the instructors' web site through "MARZ" system is

very important in enhancing the education process. A majority of 81% in Question 14 agreed that the website of instructors contains the necessary files. In Question 15 a majority of 60% of the sample agreed that they refer to the website of instructors weekly, 30% each 2-3 days and 10% daily.

Questions from 16-20 capture information about the importance of existence of integration system between blackboard system and "MARZ" system. In Question 16 a majority of 95% agreed that syllabuses of courses are available on college and instructors websites. 90 % of sample agreed in Question 17 that there is integration between blackboard and MARZ systems, so this justifies the importance of building integration between these systems.

According to Question 18, a majority of 80% agreed that it is easy to obtain information from instructor's website. 75% of sample study in question 19 agreed about the necessity of the existence of website for instructors in "MARZ" system in spite of the existence of blackboard system.

In Question 20, a majority of 50 % of the sample study agreed that the infrastructure of communication in their region is suitable for distance learning programs such as blackboard and MARZ and the rest of the sample indicated that there are some difficulties in communication infrastructure.

CONCLUSIONS

The main objective of this study is to propose a unified and integrated system composed of learning management system (Blackboard) and content management system (MARZ) at King Abdulaziz University - Saudia Arabia. The finding of this study shows that the student aware of the importance of the proposed system in order to enhance the quality of distance learning and E-learning quality through a unified and integrated system. This support the statement that students are ready to deal with new technology if they find that it enhance their success and achievement.

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الهدف من الاستبيان

تحية طيبه وبعد ،

ان الهدف من هذا الاستبيان هو فحص دور نظام ادارة التعلم الالكتروني " Learning Management System

البلاك بورد ودور نظام ادارة المحتوى MARZ المستخدمين في جامعة الملك

عبدالعزيز في المساعدة في ادارة التعليم الالكتروني والتعليم عن بعد . ومن خلال دقة اجابتم يمكن تحقيق

الاهداف المرجوه من هذا البحث، لذا نرجو التعاون والاجابه على الاسئله المرفقه، علما بأن المعلومات

المأخوذه سوف تستخدم لأغراض البحث العلمي فقط ، وسيتم التعامل معها بسريه تامه.

أشكر لكم حسن تعاونكم

الباحث الدكتور منور العدوان

القسم الاول : معلومات عامه

أ- الجنس : ذكر أنثى

ب- العمر : ٢٣-١٨ ٢٤ فأكثر

ج- المؤهل العلمي :

دبلوم عالي بكالوريوس ماجستير دكتوراه

د - نوع التعليم :

انتظام تعليم عن بعد

د- السنه الدراسيه :

الاولى الثانيه الثالثه الرابعه

القسم الثاني: (نظام البلاك بورد BLACK BOARD) يرجى توضيح الى أي حد توافق مع العبارات التالية عن طريق وضع إشارة (√) تحت الاختيار المناسب :

					1= موافق بشده	2=موافق	3= محايد	4= غير موافق	5=غير موافق بشده
5	4	3	2	1	العباره				
					1. لديك الخبرة الكافية في التعامل مع الحاسوب وتقنية المعلومات				
					2. يعتبر نظام ادارة التعلم الالكتروني مهما في اكمال ومساعدة عملية التعليم الحضوري .				
					3. التدريب على نظام ادارة التعلم الالكتروني BLACK BOARD كان كافيا				
					4. نظام ادارة التعلم الالكتروني BLACK BOARD يحتوي على تقنيات حديثة تساعد في تحسين عملية التعليم الجامعي.				
					5. أتابع نظام ادارة التعلم الالكتروني BLACK BOARD بشكل : أ. يومي <input type="checkbox"/> ب كل 2-3 يوم <input type="checkbox"/> ج. اسبوعي <input type="checkbox"/>				
					6. يساعد نظام ادارة التعلم الالكتروني BLACK BOARD الطلاب في فهم المقررات .				
					7. محتويات المقررات الموجوده في نظام ادارة التعلم الالكتروني BLACK BOARD مناسبة للعملية التدريسية.				
					8. نظام الاختبارات والانشطة المستخدم في نظام ادارة التعلم الالكتروني BLACK BOARD فعال ويقيس مستوى اداء الطالب بشكل فعال.				
					9. نظام الواجبات المستخدم في نظام ادارة التعلم الالكتروني BLACK BOARD يعتبر فعال ويساعد في قياس مستوى الطلاب.				
					10. نظام لوحة المناقشات "المنتديات" المستخدم في نظام ادارة التعلم الالكتروني BLACK BOARD يساعد في اثراء وفهم المقرر بشكل كافي .				
					11. يتم التفاعل بشكل مناسب ما بين المدرس والطالب خلال المحاضرات على نظام ادارة التعلم الالكتروني BLACK BOARD من خلال الميكروفون والكتابات النصية وبشكل مترامن خلال وقت المحاضر.				
					12. يستطيع المدرس والطلاب التواصل مع بعض عبر بريد كل مقرر الموجوده في نظام ادارة التعلم الالكتروني BLACK BOARD بشكل فعال .				
					13. نظام ادارة المحتوى MARZ (موقع عضو هيئة التدريس وموقع الكليه الالكتروني) في جامعة الملك عبدالعزيز يساعد في اثراء العملية التدريسية.				
					14. يحتوي الموقع الالكتروني لعضو هيئة التدريس على الملفات المهمة والضروريه للمقرر.				
					15. يتم الرجوع الى الموقع الالكتروني لعضو هيئة التدريس للاستفادة من الملفات بشكل : أ. يومي <input type="checkbox"/> ب كل 2-3 يوم <input type="checkbox"/> ج. اسبوعي <input type="checkbox"/>				
					16. يوفر موقع الكليه الالكتروني مفردات المواد				
					17. يمكن من خلال نظام ادارة التعلم الالكتروني BLACK BOARD متابعة الموقع الالكتروني لعضو هيئة التدريس (يوجد تكامل بينهما)				
					18. سهولة الحصول على المعلومات الخاصه بمحتوى المقررات من خلال الموقع الالكتروني لعضو هيئة التدريس.				
					19. يعتبر الموقع الالكتروني لعضو هيئة التدريس. وسيله مناسبة ومهمه للتواصل ما بين الطالب والمدرس رغم وجود نظام البلاك بورد.				
					20. البنية التحتية للاتصالات وسرعة الانترنت في المنطقة التي اسكنها كافيه لاتمكن من الاتصال والدخول على الانظمه التعليميه في الجامعه نظام ادارة التعلم الالكتروني BLACK BOARD ونظام ادارة المحتوى MARZ				

القسم الثالث : هل هناك شيء اخر تود اضافته ؟

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