

AOU Experience on Applying e-Learning Strategy

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Abstract

Arab Open University is one of the first organizations that adopt an e-learning methodology in the Arabic region. AOU has partnerships with the United Kingdom Open University (UKOU) and other national educational institutes. In this paper, our experience of using two e-learning platforms FirstClass, and Moodle is clarified. Further more, we discuss the developments and enhancements that have been done in-house over the learning management system; specifically Moodle; to employ our regulations and rules over this platform and to facilitate its usage for our students. A description of integrating the learning management system with other electronic systems such as student information system and human resource system is discussed. In addition to that the quality assurance strategy of the AOU is presented.

1. Introduction

The growth of Internet-based technology have brought new opportunities and methodologies in many fields including education and teaching represent in e-learning, online learning, distance learning, and open learning. These approaches are typically use in place of traditional methods and mean that students deliver their knowledge though the web rather than face-to-face tutoring.

Researchers and practitioners were divided into two camps when the concept of distance learning was proposed. Some believed that online and distance learning will reduce the quality of education based on the absence of face-to-face relationships between students and their tutors, and between the student themselves [1]; [2]; [6]. Others supported using Internet-based education, and proved the effectiveness of it by applying both methods in parallel on some courses and comparing student's results, which were nearly equivalent [19]; [5].

In the same respect, many studies address the challenges of distance learning to be accepted in the education community [3]. Johnson et al. [4] claim that "the primary among these challenges is how to meet the expectations and needs of both instructor and the student and how to design online courses so they provide a satisfying and effective learning environment". Owston [7] agrees that "the key to promoting improved learning with the web appears to lie in how effectively the medium is exploited in the teaching and learning situation".

E-learning is a new trend of education system, where students deliver their materials through the web. E-learning is the "use of internet technology for the creation, management, making available, security, selection and use of educational content to store information about those who learn and to monitor those who learn, and to make communication and cooperation possible." [8].

Kevin kruse [17] addressed the benefits of e-learning for both parties: organization and learners. Advantages of organizers are reducing the cost in terms of money and time. The money cost is reduced by saving the instructor salaries, and meeting room rentals. The reduction of time spent away from the job by employees may be most positive shot. Learning time reduced as well, the retention is increased, and the contents are delivered consistently. On another hand, learners are able to find the materials online regardless of the time and the place; it reduces the stress for slow or quick learners and increases users' satisfaction; increases learners' confidence; and more encourages students' participations.

In this paper the e-learning platform of the AOU is described in section 2. The integration process between learning management system and other computerized system is presented in section 3. Section 4 discussed the requirements and the strategies of quality assurance unit at AOU. Finally, section 5 concludes this paper.

2. The e-learning platform of the AOU

Arab Open University was established in 2002 in the Arabic region, and adopted the open learning approach. An open learning system is defined as "a program offering access to individuals without the traditional constraints related to location, timetabling, entry qualifications." [12].

The aim of AOU is to attract large number of students who can not attend traditional universities because of work, age, financial reasons and other circumstances. The "open" terminology in this context means the freedom

from many restrictions or constraints imposed by regular higher education institutions which include the time, space and content delivery methods.

Freed et al. [9] claimed that the "interaction between instructors and students and students to students remained as the biggest barrier to the success of educational media". The amount of interaction plays a great role in course effectiveness [10]. For this purpose and to reduce the gap between distance learning and regular learning, the AOU requires student to attend weekly tutorials. Some may argue that it is not open in this sense; however the amount of attendance is relatively low in comparison with regular institutions. For example, 3 hours modules which require 48 hours attendance in regular universities, is reduced to 12 hours attendance in the AOU.

In order to give a better service to students and tutor, to facilitate accessing the required material from anywhere, and to facilitate the communication between them, an e-learning plat form is needed. A learning platform "is software or a combination of software that sits on or is accessible from a network, which supports teaching and learning for practitioners and learners." [18]. A learning platform is considered as a common interface to store and access the prepared materials; to build and deliver learning activities such quizzes and home-works; support distance learning and provide a set of communication possibilities such as timetables, videos, etc.

AOU has partnerships with the United Kingdom Open University (UKOU) and according to that at the beginning the AOU used the FirstClass system as a computer mediated communication (CMC) tool to achieve a good quality of interaction. The FirstClass tool provides emails, chat, newsgroups and conferences as possible mediums of communication between tutors, tutors and their students, and finally between students themselves. The most important reason behind using FirstClass was the tutor marked assignment (TMA) handling services it provided. However, the main servers are located in the UKOU which influences the control process, causes delays, and totally depends on the support in UKOU for batch feeds to the FirstClass system [11].

To overcome these problems, AOU use Moodle nowadays as an electronic platform. Moodle is an open-source course management system (CMS) used by educational institutes, business, and even individual instructors to add web technology to their courses. A course management system is "often internet-based, software allowing instructors to manage materials distribution, assignments, communications and other aspects of instructions for their courses." [13] CMS's, which are also known as learning management systems (LMS) or virtual learning environments (VLE), are web applications, meaning they run on a server and are accessed by using a web browser. Both students and tutors can access the system from anywhere with an Internet connection. The Moodle community has been critical in the success of the system. With so many global users, there is always someone who can answer a question or give advice. At the same time, the Moodle developers and users work together to ensure quality, add new ,modules and features, and suggest new ideas for development [14, 15]. Moodle also stacks up well against the feature sets of the major commercial systems, e.g., Blackboard and WebCT [16]. Moodle provides many learning tools and activities such as forums, chats, quizzes, surveys, gather and review assignments, and recording grades.

Moodle has been used in AOU mainly to design a well formed learning management system which facilitates the interaction among all parties in the teaching process, students and tutors, and more over to integrate the LMS with the student information system (SIS) and the human resource system (HRS).

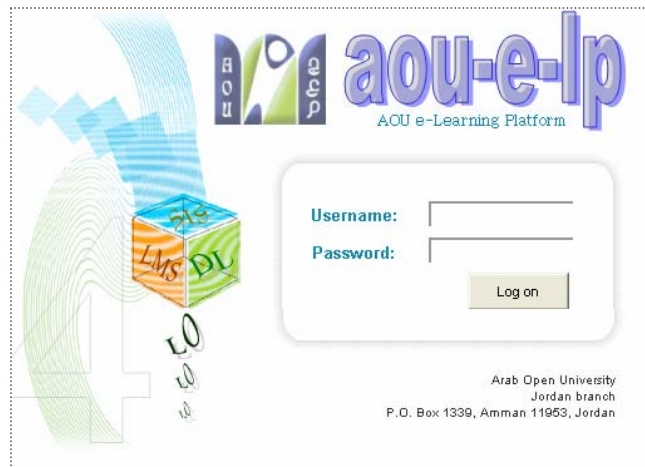


Figure 1. The unified image of the AOU e-learning systems

In addition that Moodle is easy to learn and use, and that it is popular with large user community and development bodies. Moodle is flexible in terms of:

- Multi-language interface,
- Customization (site, profiles),
- Separate group features, and pedagogy.

The unified image of the e-learning platform of the AOU from the starting web page shown in figure1, the users will be able to:

- Connect to the SIS, where they could do online registration, seeing their grades and averages as presented in figure2.
- Perform learning activities through the LMS, such as submitting assignments, do online quizzes, etc.
- Retrieve resources through AOU digital library subscriptions.

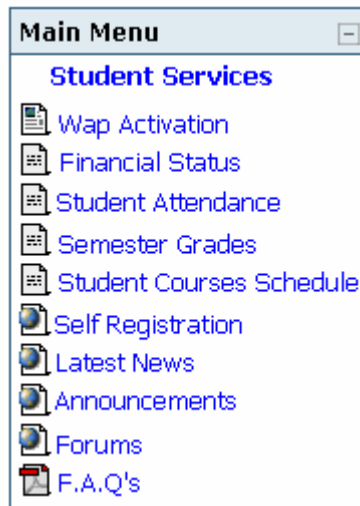


Figure 2. The SIS of the AOU

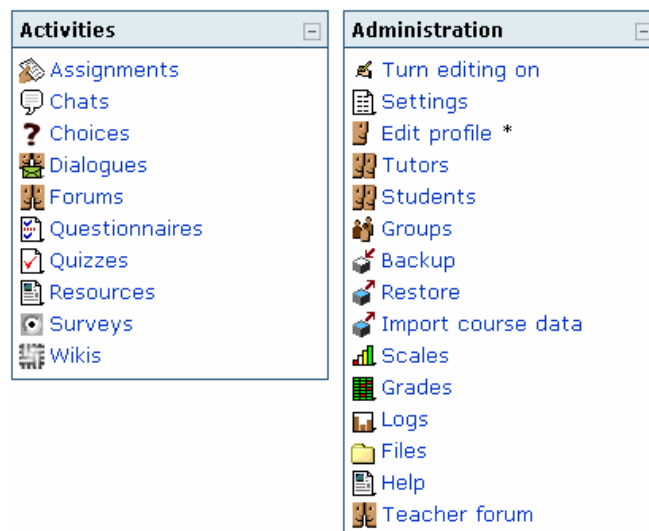


Figure 3. LMS course activities and administration

3. Integrating LMS with other computerized systems at AOU

The learning management system (LMS) is software that automates the administration of training events. The term LMS is now used to describe a wide range of applications that track student training and may include functions to:

- Manage users logs, course catalogs, and activity reports
- Provide basic communication tools (email, chat, whiteboard, video conferencing)
- Manage competency (e-Tests, e-Assignments)
- Allow personalization (user profiles, custom news, recent activity, RSS)
- Enable monitoring activities (QA, accreditation, external assessment).

The usefulness of the LMS could be summarized as follows:

- Simplicity, easy creation and maintenance of courses.
- Reuse, support of existing content reuse.
- CMC, TMA, Tests, Progress, learner involvement.
- Security, secure authentication/authorization
- Administration, intuitive management features
- Technical support, active support groups
- Language, true multi-lingual
- Affordability, maintenance and annual charges.

AOU has many computerized systems that facilitate services to students and staff. In the following subsections we will discuss the integration process done on Learning Management System (LMS) with Student Information system (SIS), Human Resource System (HRS), and the enhancement needed to integrate such systems together.

3.1 Integrating LMS with SIS

The student information system (SIS) is an Oracle based program which provides the necessary information such as students' information, courses registered, faculties, grades, etc. LMS integration with SIS (or LMS-SIS) is a system used inside the university to reducing accessing time, automatically generating accounts, minimizing faults, mistakes and errors to null, obtaining availability of requirements and simplifying registering, entering and filling process as shown in figure 4.

The integration process added a lot of facilities which reduces time and cost in the following ways:

- Automatic structure enrollment: each student is provided with a username and password which enable students to register automatically.
- Automatic course enrollment: students are automatically enrolled into LMS courses they have been registered.
- Automatic group enrollment: students are automatically enrolled into LMS courses group, as they registered this group in the university.
- Automatically withdraw students from courses where students want to drop or have some financial problems.
- Student semester grades: students are enabled to see their grades through the LMS rather than bringing it from registrar.
- Students registered courses: where students could see the registered courses information such as their groups, time, course names and short names.
- Student's financial issues: where students could see their financial status and payment schedule.

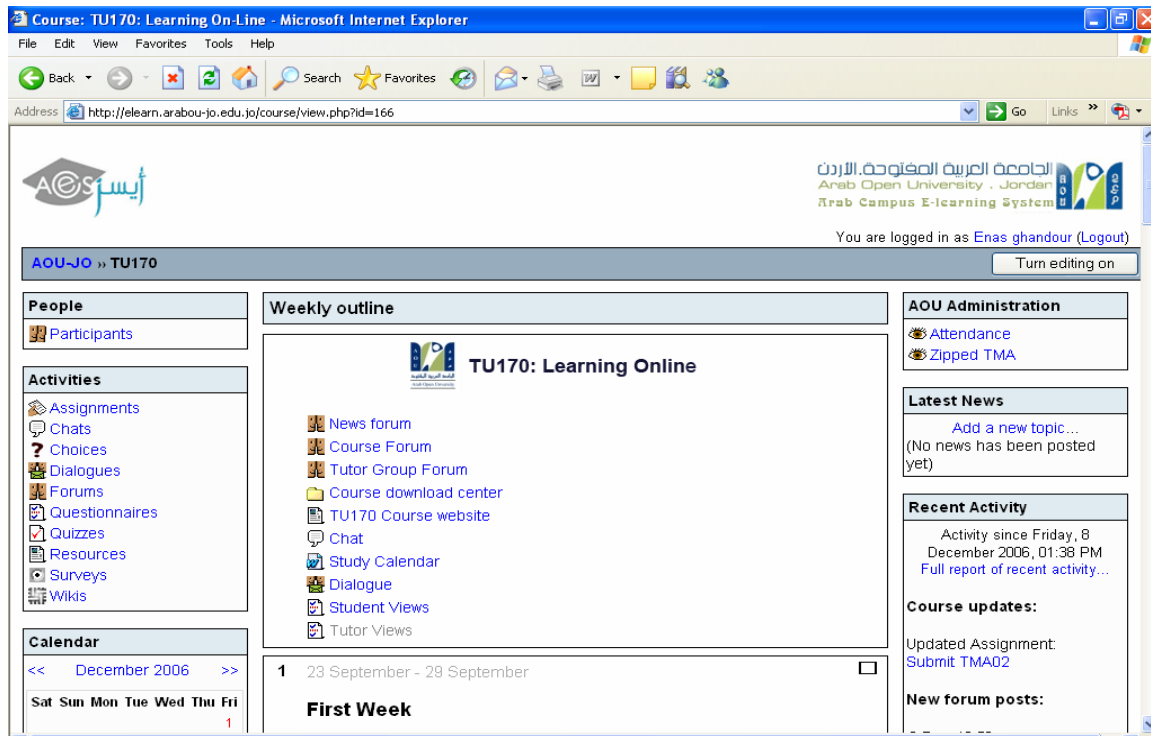


Figure 4. The LMS of AOU

The system is intended to satisfy the special needs and methodology adopted at the AOU. The SIS is flexible enough to adapt to the specific needs of branches while maintaining a unified standard that facilitates the interoperability of the system amongst branches and the headquarters. The SIS performs all aspects of students' information functions from filing an application to admission up to graduation, within the AOU methods. The SIS deals with all the entities involved and facilitate an easy and reliable way of the entities to perform their functions.

3.2 In-house development and enhancements

To fit the AOU requirements and specification, a number of modifications and customizations were made (see Figure3), including:

- Log records. Logs are replicated into other isolated tables, to increase performance, and to keep track records for long period, while removing these log records from original tables.
- Activate questionnaire for students. Redirect students to fill the questionnaire of each course they study.
- Export questionnaire results to Excel files in special format.
- Students' attendance and absences sheets are provided.
- Grades customizations (fractions) excel sheets are available.
- Randomly captured assignments for quality assurances purposes.

3.3 Integrating LMS with HRS

AOU uses a computerized system called human resource system to serve the employees and to keep all employee's records and transactions including:

- Basic information and details related to the employee and the changes that take place.
- Personnel information related to the employee.
- Academic qualifications of employees.
- Practical experience of employees.
- Personnel documents and attended workshops.

- Allowing all employees to take leave or vacations and following up on the rejection or acceptance of these online.
- Do all financial tasks and issuing salary slips for employees and emailing them to the private account of employees.
- General different types of required reports

By connecting LMS with HRS, all the required information regarding tutors and other academic teaching personnel information will be automatically migrated from HRS to the LMS. This process saves a lot of efforts and reduces time and redundancy of storing information, in addition to the increase of efficiency and accuracy. The process starts at the beginning of each semester by creating the groups for ever offered course over the LMS platform. All required information for creating groups and assigning tutors are migrated from the semester timetable in the SIS system. The time table contains group details in addition to tutor identification number. The rest of required tutor information such as email, department, major, title, etc are collected from the migration with the HRS. Many further studies regarding the integration of SIS with all computerized systems still in progress to obtain more efficient procedures within AOU daily functions.

4. Quality assurance strategy at AOU

Arab Open University with the collaboration with UKOU performs a number of procedures to guarantee the quality of learning process. The descriptions of these procedures are summarized in the following points:

- TMA marking template: Tutor marked assignment template is a form filled by the tutor of a course for each submitted TMA by students. It contains the deserved grade for every part of the TMA along with the feedback comments to the students.
- TMA monitoring: A form filled by the course coordinator and the program coordinator designed for monitoring tutors marking and filling the TMA templates.
- TMA samples: Three TMA samples should be collected for each section. One with a good grade, one is average, and one with a low grade.
- Quiz samples: Three samples should be collected for each quiz.
- Final exam samples: Three samples should be collected for each section of every course.
- Student questionnaire: A questionnaire filled by the students of every section to monitor the tutor, the course, and the tutoring environment.
- Tutor view questionnaire: A questionnaire filled by tutors to monitor the course content and the tutoring environment.
- Face-to-face preview: A form filled by the program coordinator to monitor tutor performance after attending a tutoring session of a specific tutor.
- Final grade statistics and distributions: grades reports and distributing of grades generated by SIS system after submitting student final grades.

At the end of each semester, each course coordinator has to prepare a complete folder that contains the following documents:

- Three samples of a marked TMA for each tutor in the course, each sample should be associated with its marking template and its monitoring form approved by the program coordinator. Notice that the three samples should be selected randomly; one is good, one is average and one is weak, and this is done automatically nowadays.
- Three samples from each quiz during running the course. One sample from each of the good, average and weak categories.
- Three samples from the marked final exam of the course. One sample from each of the good, average and weak categories.
- 4-The face-to-face monitoring form for each tutor.
- The tutor monitoring forms
- Results of student questioners on the course level and for each tutor.
- Students' grades
- Grade distributions and statistics.

One of the duties of the program coordinator is to supervise the preparation of the above documents for all courses in the program and send them to the headquarter of the university to be reviewed from the external examiners whom usually come from UKOU.

Notice that preparing and performing such documents consume the time and efforts of many administrative and educational members of the university including tutors, course coordinators, program coordinators, and secretaries.

5. Conclusion

The open learning and distance learning become widely used as a way of teaching in the education community. The need for learning management systems to deliver the courses online becomes a significant issue. We discussed the efficient features of Moodle as a learning management system used in the Arab Open University. In this paper, a complete description of the improvements that have been conducted over the learning management system at AOU is introduced. The university strict regulations on the learning process to assure the quality of delivering all learning activities in an optimal way. Accordingly, there is a need to improve the existing learning management system to guarantee the implementation of such quality assurance regulations electronically to save effort and to perform all required procedures. We presented the integration process between learning management system and student information system and the human resource system that has been applied in the Arab Open University. Having consistent data is one of the main cores of the integration process in addition to the saving of efforts of time and cost. Moreover, this integration facilitates a lot of services which were done manually, basically the automatic enrolment process.

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