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Utilizing JUSUR in an information systems course

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ABSTRACT

The aims of this paper are to report the perceptions of both faculty and students when JUSUR, a web based Learning Management System, is used to supplement the teaching inside and outside the classroom during one academic subject; and to compare the experience of the instructor who had previously taught the same course using a course website to support traditional face-to-face methods with interactive web-based technology. Qualitative online evaluation at the end of the course in which the JUSUR component was employed shows that students have positive attitudes about web-based learning management system. This paper discusses the pros and cons of integrating JUSUR into a course and identifies factors that other Instructors may consider before using such an e-learning tool.

Keywords: E-learning; Technology; Learning Management Systems; JUSUR; perceptions

INTRODUCTION

A fundamental change in the way students are taught is becoming necessary as students are increasingly demanding multiple teaching media and access to the most recent information. Consequently, the incorporation of e-learning into the delivery of course materials and assessment of students as well as obtaining their feedback regarding the course and the instructors have become vital.

E-learning involves the use of Information and Communication Technology (ICT) to support learning. It is delivered either entirely online or as part of a 'blended' approach. Blended approach emerged as a consequence of the failure of several e-learning environments which lack a face-to-face component (Stracke, 2007). E-Learning normally refers to the delivery of educational content via a variety of electronic media such as the Internet, intranets, extranets, and satellite broadcasts as (Govindasamy, 2002). In this respect, e-Learning is emerging as the paradigm of modern education, especially in post-school education, because it provides a platform that can transform teaching by utilizing active learning strategies to create an interactive experience. A number of studies (Spiceland, 2002; Knowles & Kerkman, 2007) show that students have more positive attitudes toward online learning.

Different technology applications are used to support different models of online learning. There are asynchronous communications tools to allow users to contribute at their convenience, and synchronous technologies to augment face-to-face teaching strategies such as holding meetings with groups of students at the same time. Most applications combine multiple forms of synchronous and asynchronous online interactions as well as face-to-face interactions.

E-learning has also become popular for teaching and learning because of its potential for providing more flexible access to content and instruction at any time, from any place. There are several other benefits of using e-learning systems (Lorenzetti, 2005; Liaw, Huang, & Chen, 2007; Hong, Lai, & Holton, 2003; Shotsberger, 2000).
It is claimed that efforts to implement e-Learning will move towards total automation of administrating the teaching and learning processes by means of Learning Management Systems

(LMS) (Govindasamy, 2002). LMS are commonly considered as the starting point of any web-based learning program (Cavus & Ibrahim, 2007) because they provide the platform for the web-based learning environment through enabling the management and delivery of the blended learning experience as well as the tracking of users.

Although E-learning has been widely used in educational institutions for more than a decade, it is still in its infancy in Kingdom of Saudi Arabia (KSA) when compared to European countries such as UK. The UK e-learning market size in 2009 was of between US €650 and €700 million (Patterson & Jung & Broadhead, 2009), while the Saudi e-learning market was projected to reach $125 million by 2008 (The learned Man! 2009). Research about the current market size in KSA was conducted but no current reports were found.

Recognizing the needs of its citizens, the Saudi Ministry of Higher Education has established a National centre of E-learning and Distance learning (NCeDL) to provide instructors of any local universities with ways to create, deliver and manage interactive and engaging educational materials through its LMS named JUSUR, which is an Arabic word that means bridges.

2. Field Experience

The instructor taught an Introduction to Information Systems course for 5 semesters using face-to-face methods with the course website as a tool for delivering the course materials to the students. This tool was sufficient for such a task but it was lacking the interactive component which makes learning an interesting experience, for instance the interaction with the students outside the university walls. Therefore; the need to transform the e-learning experience by adding a new system that allows the creation of effective learning environment was essential to foster active learning, allowing the students to interrelate with the learning content and to prepare them for the complexities of a rapidly developing society.

This task was initiated by looking at different tools for e-learning used in the educational system. Blackboard is the most popular commercial available LMS. ATutor and Moodle are well known Open Source software packages that integrate a variety of functions. Many institutions use them as their platform to conduct online courses but they do require server space and network management. Although, they could be used for free hosted by many providers, as Keytoschool or TMDHosting, they are usually overloaded and under supported because once the instructors classes and participation grows, these free hosted sites are usually not able to offer the services and secure setup that is required for course delivery. In addition, there are others tools that are fully web-hosted that do not require any software download or management of the server such as edu2.0, WIZIQ and JUSUR (a locally developed tool).

3. JUSUR

JUSUR is a Saudi web-based application that includes functionality for launching courses, registering users, tracking student progress and assessing student learning. JUSUR uses a browser interface to display a public front-end for students and a private back-end for administrators and instructors. JUSUR is a locally developed platform which is freely available for academics; and can be hosted for free by NCeDL meaning that instructors can start creating their online classes without having any programming and installation knowledge or managing server maintenance. NCeDL is responsible for all administration, management of the system and user registration. In addition, NCeDL offers regular in-house workshop for its users.

This study was conducted to evaluate the level of satisfaction of the students and the corresponding instructor after using JUSUR as a way to deliver e-leaning. This LMS includes five main functions as illustrated in Figure 1: Course Information, Collaborative Tools, Assignments Tools, Additional Tools and Admin Tool. These features were always active throughout the semester.

Figure 1. *JUSUR main features*

METHODOLOGY

A group of 25 female students with no previous experience with LMS were the target of this study, as the students were taught for one full semester using JUSUR. These students had enrolled at the computer and Information Sciences department at Prince Sultan University (PSU). Surveys of the participants were conducted online using the JUSUR Survey function at the end of the semester to have sufficient data to analyze students' opinions on various aspects of this system and to gain insight into the students' perceptions of the course. It was hoped that this information could be used to facilitate improvement of the course in future years. It is worth mentioning that all the submissions were anonymous, the instructor could not identify who submitted which survey, but could still keep track of who had submitted a response and who had not.

The survey questions consisted of opinion questions as shown in Figure 2 and one open-ended question. The open-ended question provided qualitative responses, allowing participants to respond in their own words about their own experience using JUSUR. To save valuable class time the students were asked to complete the survey online and thus allowing them to voice their

opinions at a time suitable to them. The questionnaires were accessible to students for a length of two weeks. Figure 2 shows a sample of the content of the questionnaire.

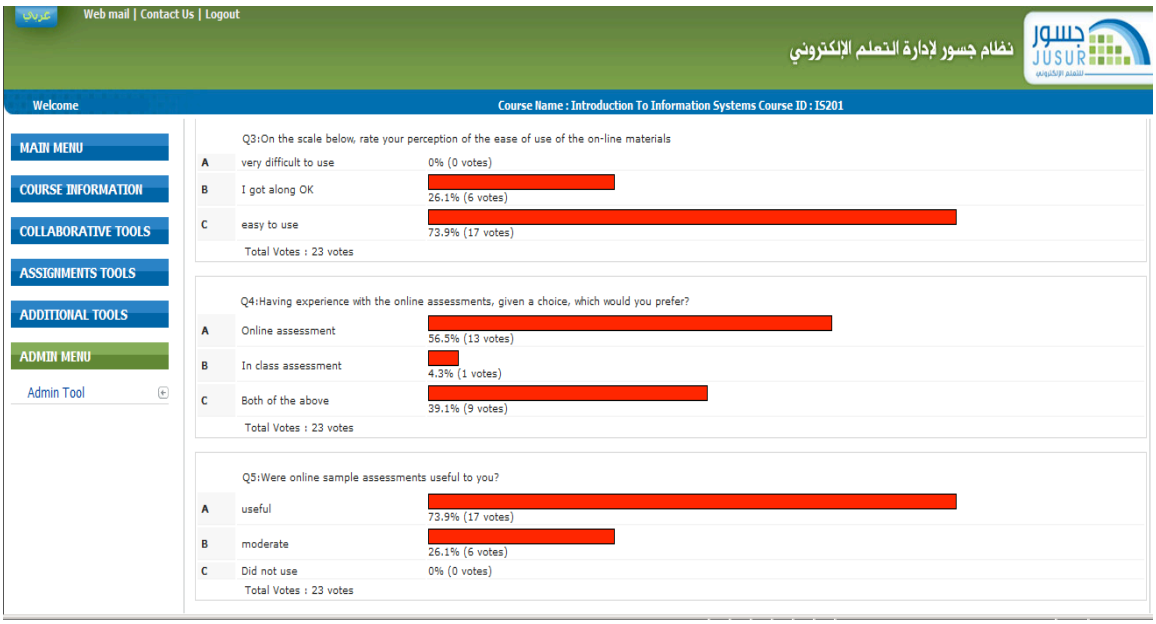

Figure 2. *Sample Survey Results*

SURVEY RESULTS

The responses to the opinion questions in this paper were received from 23 out of 25 students in total, which constituted a response rate of nearly 92%, and were organized under: online chat sessions' effectiveness; tools used for delivering online materials; usefulness of the forum; ease of use of online assessments; and keenness to use the system in other courses in the future. Key findings from the survey included:

1. 78% of students responded that this was their first time experience with online assessment as part of their learning, with 22% who took this kind of assessment before and 0% not sure.
2. Over 56% reported that online content enabled them to prepare ahead for lectures and advanced their learning, while about 39% believed that it moderately prepared them ahead for lectures and advanced their learning and over 4% responded with no.
3. When students were asked to comment on the ratio of their perception about the ease of use of online materials, about 74% thought that it was very easy to use while 26% stated that they found it easy to use. None of the respondents considered it difficult to use. This very positive response may be attributed to the students' computer science background, as these students are comfortable using computers.
4. It was also found that over 56% of students preferred to use online assessment with immediate feedback, while over 4% preferred to use in class assessments, and about 39% preferred a blend of the two assessments methods.
5. About 74% believed that sample assessments were useful while 26% responded moderately useful and no one reported that this feature was not used.

6. About participating in the online Chat sessions with their peers, almost 98% reported they always used it when they wanted to discuss the group project with their peers and about 2% responded that they never used it because most of the time no one was available.
7. When asked about the effectiveness of the online chat sessions compared to face-to-face, about 37% of students reported that online sessions are as efficient as face-to-face sessions, and 62% preferred face-to-face sessions over online ones. Face-to-face sessions were favored over online chat session, probably because it provided more interaction and immediate responses, and allowed instant clarification of questions. This complies with previous results (Johnson et al, 2000; Wang & Woo, 2007).
8. Online chat sessions with the instructor were used by all students who took part in this survey and appear to receive most attention from the students. About 96% considered them to be useful, while only 4% believed that they were not useful. One of the possible explanations was that since they were only a small number of students in the class, specific days and times a week were scheduled so as to suit everyone.
9. About 70% of students believed that Forum / Discussion board was useful for sharing information with fellow students, and 26% believed that this feature was only useful sometimes. Only 4% reported that it was not useful. (Rovai, 2004) reported that discussion boards increased student-to-student conversation and collaboration.
10. 95% thought that the system was a good place for the instructor to make announcements, and about 4% believed it was sometimes a good place for posting announcement and no one reported as it was not a good place for the instructor to make announcements
11. 65% described their experience with JUSUR as exciting, 35% as enjoyable. No one reported that the experience was just okay.
12. From the results, it was also found that 91% of students would like to use JUSUR in the future, over 4% did not want to use it again and over 4% not sure.

From the above results, similarities were apparent between response 2 and 4, about 40% of the students were not confident enough or uncertain about using online assessment or content. This could be interpreted by the fact that this is the first time they were exposed to this type of environment and it is likely that this will diminish over time.

For response 3 and 5, it is apparent that the same percentage of the students responded. This is probably due to the simple interface of JUSUR which makes it easy for them to use online sample assessments.

Most of the statements on the open-ended question were mainly positive. This is perhaps because of the students' computer science background which made them generally interested and enthusiastic to try new features. Samples of the responses are presented here:

> *Student #1: We started working from the second week with different online activities. It was too much of work, but honestly we learned many things.*
>
> *Student#2: I liked JUSUR very much especially the part where we can interact with the instructor in the chat rooms. In the previous semesters, I found it very hard to reach my instructors. It was a great experience.*
>
> *Student #3: it was great and I wish that I can use JUSUR in other courses in the future. It was difficult at the beginning of the semester, but with time, it started to be easy and enjoyable. The most interesting thing that I liked about it, is that I get my marks immediately after pressing the submit button!*
>
> *Student #4: I enjoyed the forum very much. Both chat and Announcements were useful for the final project.*

INSTRUCTOR FEEDBACK

The instructor's first impressions are that it is a simple and intuitive front page, with an engaging interface; it doesn't take very long to learn how to navigate the system. Once the users log in, they immediately see information about their courses and the other students. Technical support is also available to instructors in the form of simple user manuals and workshops to train instructors on how to use the system and about the importance of promptly replying to any user queries.
Students were encouraged to use various system' facilities and as an incentive a mark was allocated for using them. The next section reflects on the instructor experience of using JUSUR' main features:
Saudi female students find it difficult to gather collectively either on or outside campus for group project meetings due to cultural challenges. In addition, there is a lack of coordination of group activities. Consequently the instructor faces challenges in monitoring their project progress and fairly evaluating individual contribution. JUSUR's forum, file exchange and chat sessions seem to be a good solution to this issue. The forum also improved the students' class participation as compared to previous semesters because the weekly posted topics prepare them for upcoming classes. This also provided a way for shy and insecure students to participate online.
Interaction among students and the instructor also took place through chat sessions at regularly scheduled times. This function helped them to prepare for their exams, discuss various topics throughout the course from remote sites and in particular, it assisted them with their final project as constructive feedback was provided to different groups.

Most assessments and assignments (except the final exam) were graded online using the grade book feature. This gave the students up to date information about their performance any time without having to contact their instructors, it also saved the instructor's time answering many queries in this regard.

A number of surveys were conducted outside the class time to get students feedback about different course activities, the system then automatically calculated the essential statistics for each question from all the submissions received. This is not easy to do in face-to-face setting.

JUSUR has a learning resources section that allows users to browse a number of community contributed recourses by topic; instructors can also upload their own resources. Unfortunately, this feature wasn't included in this study since access to this feature wasn't always available.

As with the adoption of most new technologies, many difficulties are usually encountered at startup. Some of the drawback of JUSUR includes:

- Some of its features are not implemented properly as they are available sometimes and not at other times. These include accessing community learning resources, exporting the students' grades into Excel format. However, this problem was solved towards the middle of the semester.
- The grade book does not record the marks of the students as points but only as percentage.
- The interface cannot be easily customized according to the user' taste.
- The collaboration feature does not include a simple wiki or a personal blog.

CONCLUSIONS

Although the sample size of this study was rather small the results showed that the students were engaged with this learning experience. This led to the conclusion that JUSUR can be a very useful tool to complement classroom learning especially for users who can't afford commercial LMS, hardware infrastructure, hosting services, and who don't have necessary IT skills.

From the students prospective, the results of the analysis indicated that students found JUSUR to be helpful LMS that enhances the understanding of course content. This study also showed that experimenting with JUSUR has proven to be beneficial and the feedback received was mainly positive. Furthermore, the examination of individual JUSUR components revealed that students responded satisfactorily to most available features. Finally, the results of this paper suggest that JUSUR is good LMS and that the current students welcome the use of such tool in future courses.

From the instructor point of view, JUSUR is quite simple to use and could serve instructors and students with a single access point to different features as discussed in this paper, rather than using discrete components as in the case of websites. This makes it simpler for students to keep focused on the learning tasks, and could be considered as a first step in using e-learning tools.

Finally, although JUSUR holds great potential it needs to be equipped with many more necessary educational materials such as e-books and journals. This can be implemented through subscription to a number of world-class digital libraries which can be accessible to the instructors and students, and encourage instructors to post more content to augment the learning resources repository in NCeDL in the future.

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REFERENCES

Cavus, N & Ibrahim, D 2007, 'Assessing the success rate of students using a learning management system together with a collaborative tool in web-based teaching of programming languages', *Journal of Educational Computing Research*, vol. 36, no.3, pp.301-321.

Govindasamy, T 2002, 'Successful implementation of e-learning pedagogical considerations', *The Internet and Higher Education*, vol 4, pp.287–299.

Hong, K. S, Lai, K. W, & Holton, D 2003, 'Students' satisfaction and perceived learning with web-based course', *Educational Technology and Society*, vol. 6, no.1, pp.116–124.

Johnson, D, Sutton, P & Poon, J 2000, 'Face-to-face vs CMC: student communication in a technologically rich learning environment', *Proceedings of the 17th Annual Conference of the Australasian Society for Computers in Learning in Tertiary Education (ASCILITE),* viewed 9th February 2010, http:// www.ascilite.org.au/conferences/coffs00/papers/daniel_johnson.pdf

Knowles, E & Kerkman, D 2007, 'An investigation of students' attitude and motivation toward online learning', *Student Motivation*, Vol. 2, pp. 70-80.

Liaw, S. S, Huang, H. M & Chen, G. D 2007, 'An activity-theoretical approach to investigate learners factors toward e-learning systems', *Computers in Human Behavior*, vol 23, pp. 1906–1920.

Lorenzetti, J. P 2005, 'How e-learning is changing higher education: a new look', *Distance Education Report*, vol. 22, July, pp.4–7.

Patterson, D, Jung, G & Broadhead, G 2009, *The UK e-learning market 2009*, viewed 15th February 2010, http://www.creativesheffield.co.uk/NR/rdonlyres/3AADC9A6-627A-486C-B1C9-0AC3BAD5C538/0/UKelearningmarketreportbyLearningLight2009_2_.pdf

Rovai, A.P 2004, 'A constructivist approach to online college learning', *The Internet and Higher Education*, vol. 7, pp. 79-93.

Shotsberger, P. G 2000, 'The human touch: Synchronous communication in web-based learning', *Educational Technology*, vol. 40, no 1, pp. 53–56.

Spiceland, J. D 2002, 'The impact of learning of an asynchronous active learning course format', *Journal of Asynchronous Learning Networks*, vol. 6, no. 1.

Stracke, E. 2007, 'A road to understanding: A qualitative study into why learners drop out of a blended language learning (BLL) environment', *ReCALL,* vol. 19, no.1, pp. 57-78.

The learned Man! 2009, *Saudi Arabia - eLearning Market Size 2008*, viewed 15th February 2010 http://www.thelearnedman.com/2009/05/saudi-arabia-elearning-market-size-2008.html

Wang, Q & Huay L 2007, 'Comparing asynchronous online discussions and face-to-face discussions in a classroom setting', *British Journal of Educational Technology,* vol. 38, no.2, pp. 272–286.