

Improve the usability of student information system at Aden University

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Abstract

The performance of school is increasingly being judged by the basis of effective usability of student information system. Information or data gathered on such critical systems are very important for the improvement in the student outcomes. The aim of this research is to study the use of student system by the staff and students of faculty of oil and minerals. To achieve this aim, the present research attempts to answer the following questions: a) how do students and the staff of Instructional Technology Department use the system? b) What are the advantages and disadvantages of the system? c) Are there any statistical differences in the answers of the participants according to their scientific degree? d) Are there any statistical differences in the answers of the participants due to the training programs? On the basis of the research questions and objectives, the researcher uses the descriptive method which is appropriate to the objectives of the research. Results of the research revealed that emails and forums are used mostly by the students and assignments are used by the faculty members. The researcher recommended adding standards for using the system as a learning management system to be part of evaluating the staff in Aden University and it is better for them to be paid for using the student system in order to motivate them. Also, it is recommended to publish a printed brochure about how students can use the system.

The researcher suggested conducting further research that studies the use of the student information system at Aden University Faculty of Oil & minerals considering larger participants and limitations of the study

Keywords: usability, student system, online result, outcome analysis, student, information system, improvement, timetable, Usability Evaluation,.

1. Introduction

This absence of usability will lead users back to the traditional means of interacting with the institution, for example students must make a visit to the academic office to register for classes. This paper will address the strengths and weaknesses of the usability aspects in the design of the student information system, and how it could be improved, thus producing better and great outcomes for the students and the institution as a whole. The results of the study are expected to aid the system's developer overcome limitations of the student information system and improve its efficiency, and usability.

The usability of systems or applications have been the interest of many experts dating back to the 90s. This is because system usability has a greater impact on the user behaviour, thus making it impossible for one to use a system which is impractical and not producing great outcomes. However, it seems to be a different case when it comes to student information system in university, whereby users do not have a choice but to use a system which is outdated and doesn't produce any significant outcomes. Although making student information systems usable is important, but the number of studies that have focused on the importance of analysing, evaluating, and designing student information systems (especially student information systems of Arabic universities) is very low. However, these studies that investigate the student information systems in

order to analyse and design them did not consider the student perception [6].

In the context of student information systems, the student is the main target that the university always provides information, services, and support. So student information forms a critical component of the university website, and due to this importance student information system should be located in a separate system to support student functionalities. Student information system exists in universities, colleges, and schools in order to organize student information. Student information system could be traditionally based on papers which requires heavy work manually and consumes long time to process. In the other hand, student information system recently created based on computerized information and technology change the way to another method, using computers and depending on the internet. Developing student information systems with a graphical user interface is not sufficient to achieve usability of the website, since the use of systems cannot be measured only by the user interface design. Student information system that are designed for universities do not only reduce cost and time of members work in the university, but also they facilitate the communications between guests, students, and instructors in efficient way. Additionally, student information systems reflect positive image of the university, giving the power of competition and gaining the benefits of opportunities.

2. Related Studies

The educational process is the efforts and actions made by the university to achieve the objectives set, i.e., it means the university to achieve its goals, nor are the educational process automatically with no controls or assets, but must be performed within the framework of semester system has provisions and controls in order to university achieve its goals.

Divided school systems into two main types: the first depends on the limit on the duration of the study, and the second depends on determining curriculum a course of not abide much the duration of the study, belongs to the first type system full school year, the system of the classroom, and the system of academic levels while belongs to the second type system Credits.

And the success of any semester system in its ability to face internal and external challenges facing our education university, and the reflection of these variables, we find it to be that we seek to choose a new school system suited to the specificity of the Islamic Arab society, and helps the student to follow the technological evolution.

SIS for Perceived Usability Evaluation of Systems

The ease of learning the system from the perspective of the research community is one of the advantages of the student system - and its degree of difference among the members of the research community - is in line with the findings of the Martin Study (easy use of the system is characterized by the most useful characteristics) Search for high-end computer skills, site guidance on how to use it, or dealing with BlackBerry-like websites. As a result of the ease of access to the system and the system's advantages, they agreed on the conclusion that Nawaf about the ease of use of this technology at any time and from anywhere inside and outside the campus, due to the fact that access to the system does not require complicated procedures Only the user name and password, available through the Internet and which is available everywhere, and the system provides synchronous and asynchronous communication means are accessible at all times and from anywhere.

This research was agreed with the studies on the outcome of the possibility of communicating anywhere, or communicating with students and faculty members in other universities. To communicate with students and faculty members from the same university. This may be due to the fact that the system provides more than one option for simultaneous or asynchronous communication. There are e-mail, forums and chat rooms, choosing from their needs without the need to communicate face-to-face.

In addition, this research agreed with Ismail's studies on the effectiveness of the system in developing the students' skills in the course. This may be due to the fact that the features offered by the system such as the forum and the chat contribute to the students' skills of dialogue, discussion

and thinking, In the system contributed to the students' possession of cooperative work skills.

SUS for E-learning Systems Usability Evaluation

Usability is defined as the extent to which a system supports its users in completing their tasks efficiently, effectively and satisfactorily. Usability may also include an aesthetic component. On the web usability extends to factors such as speed, clarity, intuitiveness of navigation, ease of use, readability and personalization.

Usability is already regarded as an important part of software quality feature. It has gained its importance not only for the software users, but also for manufacturing companies and organizations. It measures the software ability to achieve the suggested tasks The main aim of SIS is to provide services and up to date information for the users including students, administrators, and lecturers efficiently in different ways. Student Information systems are mostly created based on the institution structure, objective, and technology and the university website development does not consider the student perspective to meet user's needs.

Last decade, web applications development of university website has taken into account the needs of the main users in order to manage the relationship between different perspectives and point of views. Respectively, many researchers defined the main principles of web application development describing the usability of the university website to make the website usable, learnable, easy, and safe. Educational research referred to educational research a variety of methods which are based on improving different aspects of education and learning, and the activity found in educational research aims to provide knowledge that can be taken advantage of in order to achieve educational best methods and techniques, goals, and this is done through the study of the student environment , teaching methods, teacher training, and the nature of the classroom, and we must educational research conducted rigorous and systematic ways and applied to be teaching and education effective and up to date and requirements of the course, so we will recognize the importance of research and educational objectives that seek them through the site theme. The importance of educational research there are disciplines which are based on somewhat teaches educational research including: psychology, sociology, philosophy and could be limited to the importance of education by: training of researchers familiarized themselves and conduct studies and research in various areas of sound education, and through: the development of threshing capabilities through research and familiarity with the concepts and the foundations of educational research. Help the student on the right choice of the problem and determine the best methods to study and come up with good opportunities to solve, because it must always interpret the results of educational research within the

context in which it was discovered because they may not be applicable in every time and place. Enable science concepts, scientific research and its methodology to the researcher, because when you are studying education and useful ways education can understand the importance of the student. Researcher is providing expertise through reading analytical and critical research summaries and the extent to which the application and work. Benefiting the field who need educational research and studies of education and methods of results

3. Research Methodology

This study will firstly test our system as it regarding to the usability of user interface design, content, and functionalities and services supported by the system. After that, the new design of student information system will be introduced attempting to enhance the usability and functionality of the current. Finally, the evaluation will take place again to evaluate the system after design and implementation by measuring the capabilities of the system after enhancement. All of evaluations will be based on questionnaire results.

Study Approach:

The study used the descriptive approach used in the study of school systems in universities patterns, and interpretation of circumstances and variables surrounding the university education, and discloses the reality of the application of the system in Chapters students and induction system.

Classes:

The study was as follows:

- The general framework of the study as it included the study of the problem and its questions, its objectives and its importance and its borders and the approach, tools and sample, and determines the terms, then previous studies
- This included a proposal to develop a vision system of study in university education in Yemen's Aden University, where he dealt with the foundations of this

The Survey Instrument

The questionnaire addressed to the faculty, which is divided into the following parts:

- Part I: and includes general information about the members of the study (name, degree, course in system
- Part II and has been divided into two axes:
 1. The first axis and the respect of the identification of the reality of the use of the faculty to student management system, and through two axes: first is the active system functions and the number (8) tasks to be answered by choosing active tasks. The other contains (17) is a five-track the progression of the Liker scale (strongly disagree, I do not agree, neutral, disagree, strongly disagree).
 2. The second axis: and respect to the identification of the views of the faculty of computer department members about the pros and cons of using student system has included this axis (16) is a trace gradient quintet scale of

development, and some of the proposed alternatives for the development system of study in our universities

Research Goals Adopt a strategy for e-learning in line with the general strategy of the body and determine the indicators Key performance measure.

Linking project phases academic administrative electronic system project (Banner).

Transform and develop the educational content of the curriculum to the electronic content.

Participation in amending current legislation and propose new legislation compatible with e-learning.

Provide effective electronic programs enable members of the governing bodies of teaching and training students to use the system-Learning.

Develop teaching methods and planning systems that achieve the goals of the learning process.

Holding workshops and training sessions for members of the governing bodies of teaching and training students to use the system E-learning in colleges and institutes.

Participants and Procedure

The research to obtain the approval of the department head and dean of the faculty and apply the tools of the study. The researcher distributed questionnaires and face-to-face on the faculty members and students after informing them the objectives of the study and emphasize the confidentiality of the information and in the first semester of the academic year 2016/2017 m The researcher reviewed the section for e-mail to faculty members, and access to the faculty positions in the section on the official website of the University of Aden for authenticity.

The establishment of an electronic questionnaire

Has sent questionnaires to some faculty members, and some students the researcher collects two types of questionnaires after bottling.

Data were collected and categorized and analysed and processed statistically and then write the results and interpretation Findings and Recommendations

Liker (strongly disagree, I do not agree, neutral, disagree, strongly disagree) and an open question to add other pros and cons.

•Questionnaire addressed to students, which is divided into the following parts:

Part I: and it includes general information about the members of the study (name, owning a computer and Internet account).

Part II and has been divided into two axes:

The first axis and the respect of the identification of the reality of the students use the system and students through two axes: first the tasks used and the number of student's system (8) tasks to be answered by choosing active tasks. The other contains 14 words follow the gradient of the quintet Liker scale (strongly disagree, I do not agree, neutral, disagree, and strongly disagree).

The second axis: and respect to the identification of the views of students Computer Department about the pros and

cons of using a system of students, has included this axis (16) is a trace gradient quintet (a measure strongly disagree, I do not agree, neutral, disagree, strongly disagree) and an open question to add other pros and cons. Program is designed to help manage and follow up and provide educational activities and lifelong learning, so it is considered a solution to strategic planning, education and the management of all aspects of learning in an educational institution, sources in the location of the system, as there are rooms for discussion and a portfolio of student work and other electronic services supported by the material subjects, ie programs that help in the content of courses store electronically and management as it facilitates learning management, it can also be viewed as a set of tools (exams) and information (educational content and student information) that employ the service of the context of a specific curriculum.

A comprehensive learning management system and is the central axis of the educational process on the Internet, where it is delivered courses form mail to all users of the system, and is characterized by the system easy to use and access at any time and place, and students can log into the system and access the contents of courses seminars, and carrying out several academic activities such as participating in forums, discussion sessions, handing the duties and performance exams

Data Collection and Analysis

Data modelling is the validation and documentation of existing processes and events that occur while application is being designed and developed. Data modelling techniques and tools takes and converts complex system design into an easy to understand representation of data flows and processes by creating some blue prints. Multiple models are used to view the same data, it also makes sure that all processes, entities, relationships and data flows have been identified. Basically a data model can be a flow chart or a diagram that represents relationships between data. It is time intensive to capture all relationships in the data model. A well designed data models assist stakeholders to understand the functions and discard any function if that is not appropriate.

4. Results And Discussion

As for the disadvantages and advantages of the system, it is clear that one of the advantages of the system according to the views of the students is: ease of learning, lack of need for specialization to use, and easy access to the system easily, these words obtained a degree strongly agree, and agreed with the faculty in the term - utility system components to communicate with the parties to the educational process to a degree strongly agree. One of the positive points that have obtained the degree of approval is that the system helps to accomplish tasks quickly and effectively, and contributes to the development of skills in the course and to participate effectively in educational

science, and the diversification of the types of duties and activities associated with the course.

The advantages of the system, which obtained the degree of approval according to the views of faculty members are: It is easy to learn, and does not require a specialist to use it, and easy access, contain all the capabilities and functions needed by the faculty member, Effectiveness, diversity of methods of evaluating students, contributing to the development of the content of the courses, effective participation of students in the educational process.

The disadvantages of the system from the point of view of students are: the link to the delivery of duties by a specific date on the site, and the lack of follow-up of some professors to the site of the course and may be the reason that there is no need for a faculty member to activate system in the university systems and there is nothing to stimulate the Activate and follow up.

The disadvantages of the system from the point of view of the faculty members are that the examination patterns in the system are not suitable for theoretical courses. This is contrary to the Ben Ali study, which indicates a lack of accuracy in e-learning, especially for disciplines that depend on the technical aspect and accuracy in observation. The study sample, and the need for a long time to follow up and management of the decisions - This result was agreed with the results of Ahmed about time factors and the difficulty of follow-up students in e-learning and the system Moodle - This may be due to the large number of units and responsibilities for faculty members And not The existence of incentives for them to encourage the use of the system, the lack of good training in the use of the course management, or the many problems they face without guidance to deal with these problems, or slow responses to technical support for their inquiries.

The ease of learning the system from the perspective of the research community is one of the advantages of the student system - and its degree of difference among the members of the research community - is in line with the findings of the Martin Study (easy use of the system is characterized by the most useful characteristics) Search for high-end computer skills, site guidance on how to use it, or dealing with websites. As a result of the ease of access to the system and the system's advantages, they agreed on the conclusion that Nawaf about the ease of use of this technology at any time and from anywhere inside and outside the campus, due to the fact that access to the system does not require complicated procedures Only the user name and password, available through the Internet and which is available everywhere, and the system provides synchronous and asynchronous communication means are

accessible at all times and from anywhere.

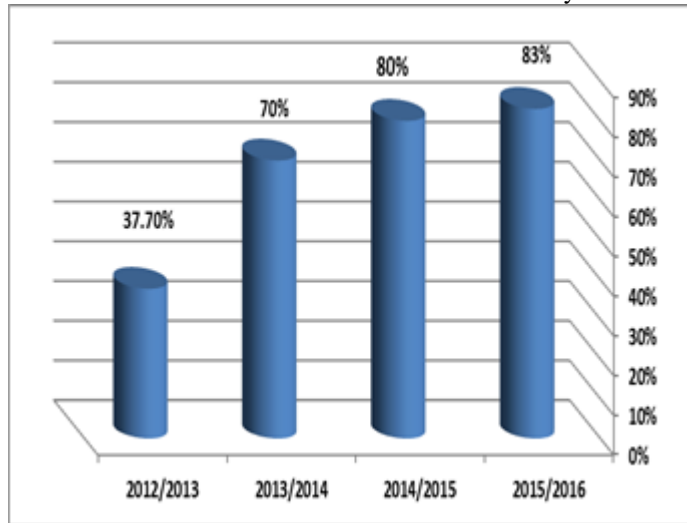


Fig. 1.

Percentage of Full-Time Teaching Staff with at Least One Refereed Publication during the Previous Year in the academic years 2012/2013 through 2015/2016.

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In addition, this research agreed with Ismail's studies on the effectiveness of the system in developing the students' skills in the course Usability testing is a technique utilized in user-centered interaction design to evaluate the university SIS by testing it on users. The testing is traditionally associated with these four usability attributes to measure the degree of (1) Effectiveness. This may be due to the fact that the features offered by the system such as the forum and the chat contribute to the students' skills of dialogue, discussion and thinking, In the system contributed to the students' possession of cooperative work skills.

- Respondents agreed that the chapters system enjoys advantages including:
- That makes students more serious in their work.
- It leads to an increase of students and teachers in their effort.
- - Respondents agreed that the chapters system has drawbacks, including:

Advantages and Disadvantages of using Questionnaires

Like any other data gathering method, there are several advantages and disadvantages of using questionnaires as well. According to Carter et al (1996), some of the advantages and disadvantages of questionnaires are

Advantages

- **The responses are gathered in a standardised way, so questionnaires are more objective, certainly more than interviews**
- **Generally it is relatively quick to collect information using a questionnaire. However in some situations they can take a long time not only to design but also to apply an analyse**
- **information can be collected from a large portion of a group. This potential is not often realised, as returns from questionnaires are usually low. However return rates can be dramatically improved if the questionnaire is delivered and responded to in class time**

Disadvantages

- Questionnaires, like many evaluation methods occur after the event, so participants may forget important issues
- Questionnaires are standardised so it is not possible to explain any points in the questions that participants might misinterpret. This could be partially solved by piloting the questions on a small group of staffs or at least friends and colleagues. It is advisable to do this anyway.
- Open-ended questions can generate large amounts of data that can take a long time to process and analyse. One way of limiting this would be to limit the space available to students so their responses are concise or to sample the staffs and survey only a portion of them.

Strengths

The existence of the following:

- A strategic plan for the years 2012- 2017, including community partnership as one of Arab East College basic issues.

Aden University strongly supports the activities of all community services programs, which shows clearly in its mission, goals and objectives.

An Administrative Management and Community Services Centre.

The College offers 11 specified programs in different areas of study all contribute to serve the needs of the community as shown in their specifications.

Contributions to the community are included in promotion criteria and staff assessments.

The College adopts declared policies to establish effective relations with local sector and other bodies.
A data base for community partnership.

Recommendations:

Based on the results, I recommend the following:

In addition the use of the standard Learning Management within the evaluation of faculty members at the University of Aden standards.

In addition, rather than the use of faculty members to motivate them to activate the system in the educational process.

An effective mechanism for identifying the community needs associated with the College majors.

Encouraging students to improve their participation in community services.

Revising criteria that indicate the expected participation of teaching and other staff in community services.

Issuing an instruction manual on using the system in digital form, and Custom printed for the students of the university.

Include the use of the system as a method or means of learning in the characterization of the decisions of the academic departments and the Department of Education specifically techniques.

Suggestions:

Based on the findings of the researcher, she recommends the following:

Add the standard of using the Blackboard system to manage learning within the standards of assessment of faculty members at Aden University. Add the use of blackboard to faculty members to motivate them to activate the system in the educational process.

Issuing a guide on the use of the system in digital form and printed for the university students. Provide all faculty members with the opportunity to participate in the Blackboard Learning Management Training Course.

Provide appropriate technical support for female students and faculty members to deal with system failures.

Supporting scientific research to understand the different aspects of the system for learning management. Clarify the vision of using Blackboard system to manage learning for students and faculty members. Include the use of Blackboard as a method or means of learning in the description of the decisions of the academic departments and the Department of Education Technologies specifically.

Comparative studies and a calendar for the use of different learning management systems in the Yemeni universities and Arabic.

Conduct studies on the impact of the use of learning management system in the collection of university students in the Yemeni universities.

5. Conclusion •

Student Information systems are important these days and have become part of everyday life. In this project, student information system has been developed. This project has been completed with

re-defined schedule and implemented all the core functionality of the system. All the core functional and non-functional requirements has been implemented. In the current state, information system is ready to work in its real environment. SIS consists of three modules that include admin, tutor and students. All these modules have diverse functionality and are linked with each other. Each module is tested individually and them complete system testing has also been performed. Overall, SIS is in working form and can be used with high user experience

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