

Research Article

A Proposed Website to Evaluate the Academic Performance in College of Sciences and Arts in Unaizah

¹Hussain Abu-Dalbouh, ²Eman Al-Roieshdie, ³Amani Al-Otaibi, ³Bashaier Al-Ma7ana,

³Hanan Al-Mutairi, ³Mona Al-Mutairi and ³Nawal Al-Harbi

¹Department of Computer Sciences,

²Department of Biology, College Sciences and Arts in Unaizah, Al-Qassim University, Saudi Arabia

³Bachelor in Computer Science, College Sciences and Arts in Unaizah, Al-Qassim University, Saudi Arabia

Abstract: One of the main aims of deanship of quality assurance and accreditation in higher education is evaluated the academic and institutional performance. Therefore, effective evaluation is necessary in order to ensure academic and institutional adequately meet the requirements and teaching processing needs. A number of studies have proposed evaluation frameworks to aid in evaluation academic and institutional performance work. The students for evaluation the performance of academic and institutional have a lack of knowledge to examine and evaluate some points in the questionnaire and did not answer to the questionnaire seriously either. Thus, the questionnaire results will led to take and adopt wrong policies and decisions by the deanship of quality assurance and accreditation based on the fake feedback from the students and became the focus of concern and confusion for many academics. It is also in this confusing and difficult situation, academics sometimes disagreed regarding the questionnaire. This study aims to develop a website solution that could support students and quality unit in evaluation academic and institutional performance work in order to get the right feedback from students. This study indicated that the working environment would be improved by reducing the margin of errors or damages and the loss of some papers relating to the evaluation academic and institutional performance. It also by allowing the quality unit to assess the website and determine the improvement or complications based on the results of the evaluation process through the proposed website.

Keywords: Evaluation, higher education, performance, quality, website

INTRODUCTION

In developing countries, higher education is seen as an essential means for creation and development of resources and for improving the life of people to whom it has to serve. A highly reliable and effective performance evaluation rule is essential in decision making environments (Shawyun, 2007). In real problems, evaluation techniques engage in handling cases like subjectivity, fuzziness and imprecise information. Application of the computerized in evaluation systems can improve evaluation results (Greening and Turban, 2000). Several researchers have tried to solve this problem through the analytical hierarchy process (Saaty, 1995), for example in personnel selection (Sonja, 2001) and shipping performance evaluation (Chou and Liang, 2001).

The National Commission for Academic Accreditation and Assessment has been established in the Kingdom of Saudi Arabia with responsibility for determining standards and criteria for academic

accreditation and assessment and for accrediting post-secondary institutions and the programs they offer. The Commission is committed to a strategy of encouraging, supporting and evaluating the quality assurance processes of post-secondary institutions to ensure that quality of learning and management of institutions are equivalent to the highest international standards. These high standards and levels of achievement should be widely recognized both within the Kingdom and elsewhere in the world (NCAAA (National Commission for Academic Accreditation Assessment), 2012).

Quality assurance processes should involve all sections of the institution and be effectively integrated into normal planning and administrative processes (NIST, 2010). The criteria for assessment of quality include inputs, processes and outcomes with a particular focus on outcomes. Processes are established to ensure that teaching and other staff and students are committed to improvement and regularly evaluate their own performance. Quality should be assessed by reference to evidence and include consideration of specific

Corresponding Author: Hussain Abu-Dalbouh, Department of Computer Sciences, College Sciences and Arts in Unaizah, Al-Qassim University, Saudi Arabia

This work is licensed under a Creative Commons Attribution 4.0 International License (URL: <http://creativecommons.org/licenses/by/4.0/>).

performance indicators and challenging external benchmarks. Specific requirements in the institution's quality assurance system should be periodically reviewed to ensure that unnecessary requirements are not included and that data that is provided is actually used in an effective way (NCAAA (National Commission for Academic Accreditation Assessment), 2012).

This study focuses on developing a website in order to analyze the datasets and in order to ensure academic and institutional adequately meet the requirements and teaching processing needs by reducing misplaced and losing some papers relating to information of the evaluation. Therefore computers have been adopted in the educational environments over the last decade, mainly as a lightweight format for reference literature, but also as a time manager and easy access to other information sources (McAlearney and Medow, 2004).

PROBLEM STATEMENT

The evaluation of teaching activity is especially important for universities, as guaranteeing the quality of their studies means assuring not only the professional skills of their teaching staff but also the quality of the teaching-learning. An evaluation of teaching activity should take into account all of the procedures carried out and evaluate their magnitude and quality and qualitatively. The evaluation of teaching activity is understood to be an internal evaluation that the academic institutions carries out on its teaching staff to guarantee that teaching and other objectives of the institute are met. One of the main aims of deanship of quality assurance and accreditation in higher education is evaluated the academic and institutional performance NIST (2010). Therefore, effective evaluation is necessary in order to ensure academic and institutional adequately meet the requirements and teaching processing needs. A number of studies have proposed evaluation frameworks to aid in evaluation academic and institutional performance work. The students for evaluation the performance of academic and institutional have a lack of knowledge to examine and evaluate some points in the questionnaire and did not answer to the questionnaire seriously either. The quality unit at various universities faced many problems with tracking the student's feedback manually, where in natural case quality unit still relies on paper to record students feedback about evaluated the academic and institutional performance. In addition, evaluating manually is considered inefficient and time consuming. Thus, the questionnaire results will led to take and adopt wrong policies and decisions by the deanship of quality assurance and accreditation based on the fake feedback from the students and became the focus of concern and confusion for many academics. It is also in this confusing and difficult situation, academics sometimes disagreed regarding the questionnaire.

Questionnaires are most often used to collect student feedback. It is done at the end of each semester

for each courses taught by lecturers by distributing paper forms to students and this process is done by the instructor himself which will take time from the lecture itself and students who are absent will not be involved in the evaluation. This means that valuable information about the course evaluation and teacher evaluation will be missed.

In fact, higher education institutions should encourage, welcome and take account of student feedback which could detect problems in the teaching and learning environment early on and lead to faster, more effective improvements. Consequently the Al Qassim University (College of sciences and arts in Unaizah) values the quality of the teaching it offers to students. It encourage faculty to understand what is type of teaching is effective to use, it encourages faculty members to develop new approaches of teaching to use in the classroom where appropriate. This study aimed to develop a website solution that could support students and quality unit in evaluation academic and institutional performance work in order to get the right feedback from students.

PROPOSED SYSTEM

This study used the PHP, HTML and Java Script. But the main one is the PHP with MySQL database. PHP is a general-purpose scripting language originally designed for web development to produce dynamic web pages. For this purpose, PHP code is embedded into the HTML source document and interpreted by a web server with a PHP processor module, which generates the web page document (Kossiakoff and Sweet, 2011).

It can also be used for command-line scripting and client-side GUI applications. PHP can be deployed on most web servers, many operating systems and platforms and can be used with many relational database management systems. It is available free of charge and PHP group provides the complete source code for users to build, customize and extend for their own use (Introduction: What can PHP do, year).

MySQL it is a Relational Database Management System (RDBMS) that runs as a server providing multi-user access to a number of databases. It is named after developer Michael Widenius' daughter. The SQL phrase stands for Structured Query Language (PHP Manual Image Processing and GD, year).

Context Diagram and DFD Level-0 Diagram:

Context diagram represents several external entities or actors that may interact with a system. It is the highest level view of a system. The context diagram is a top-level view of an information system that shows the boundaries and scope (Kossiakoff and Sweet, 2011). It describes the main objective of the system and the entities involved as shown in to Fig. 1. The system major processes and data stored at a high level of detail are shown in Fig. 2.

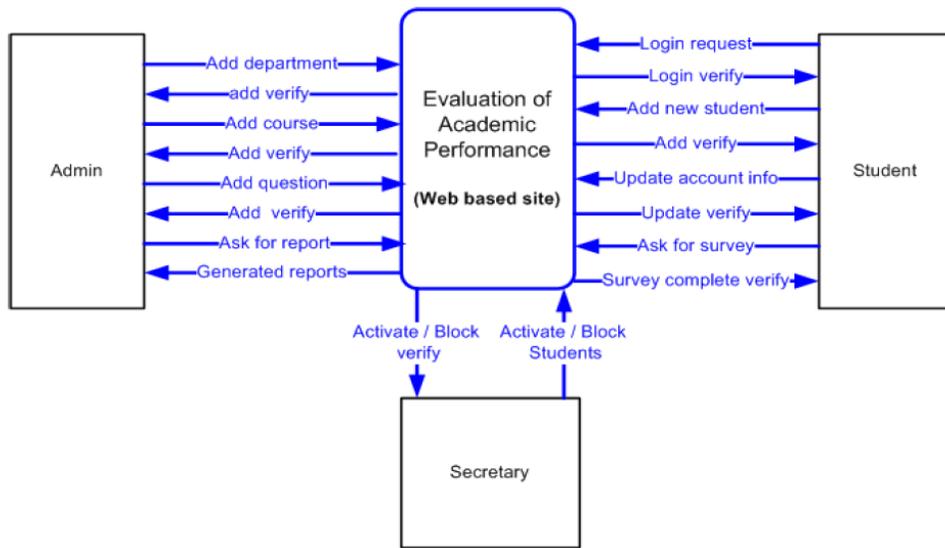


Fig. 1: Context diagram

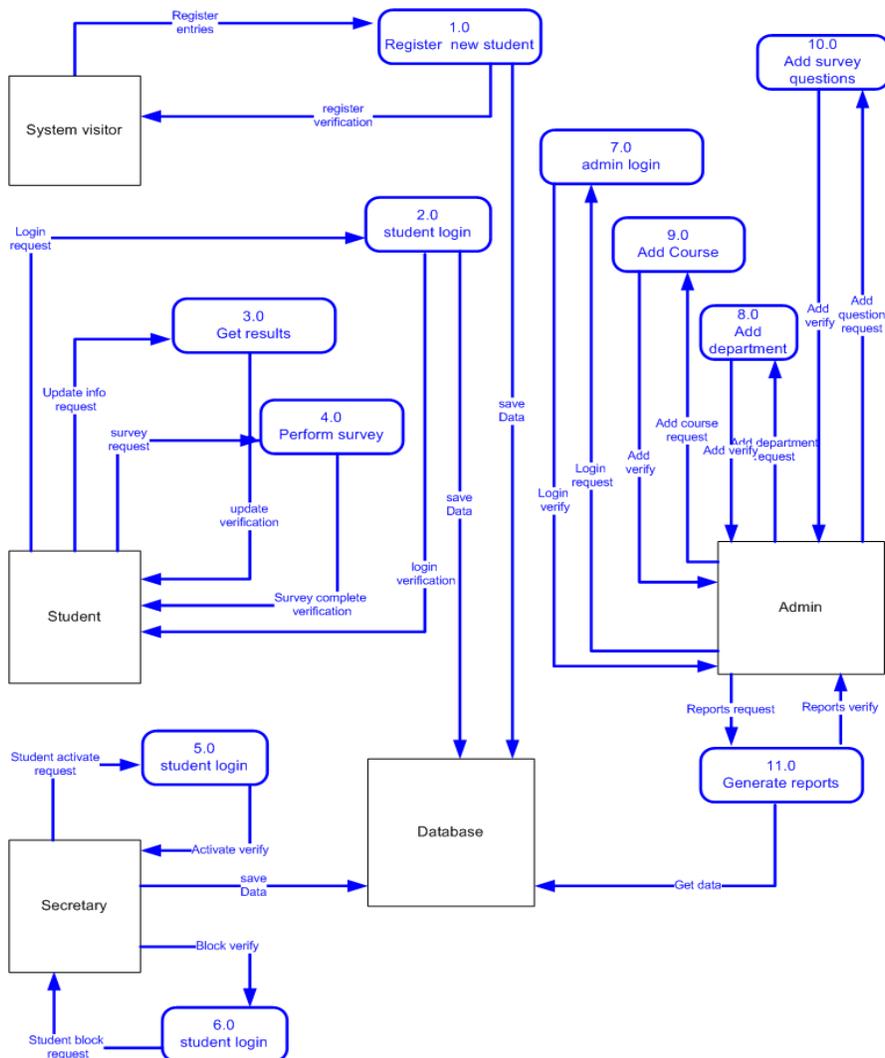


Fig. 2: DFD level-0 diagram

ER-diagram and database schema (mapping): Entity Relationship (ER) diagram is a specialized graphic that illustrates the interrelationships between entities in a database. An entity is a piece of data relationship is how the data is shared between entities, as depicted in Fig. 3. The mapping ER-diagram to database schema shown in Fig. 4.

IMPLEMENTATION

Through the proposed system we have three main phases Admin phase, secretary phase and student phase.

Admin:

Add new department: The admin can enter the system to add different departments. The system cannot accept for adding the same department twice, after that the admin can see and check the entered system department through this partition. The admin can update departments or even delete it form the system. Figure 5 shows the adding department screen, Fig. 6 shows departments list that have added into the system and Fig. 7 shows the add department using SQL into the database.

Add course: The admin can enter to add different courses to the system including its specifications such

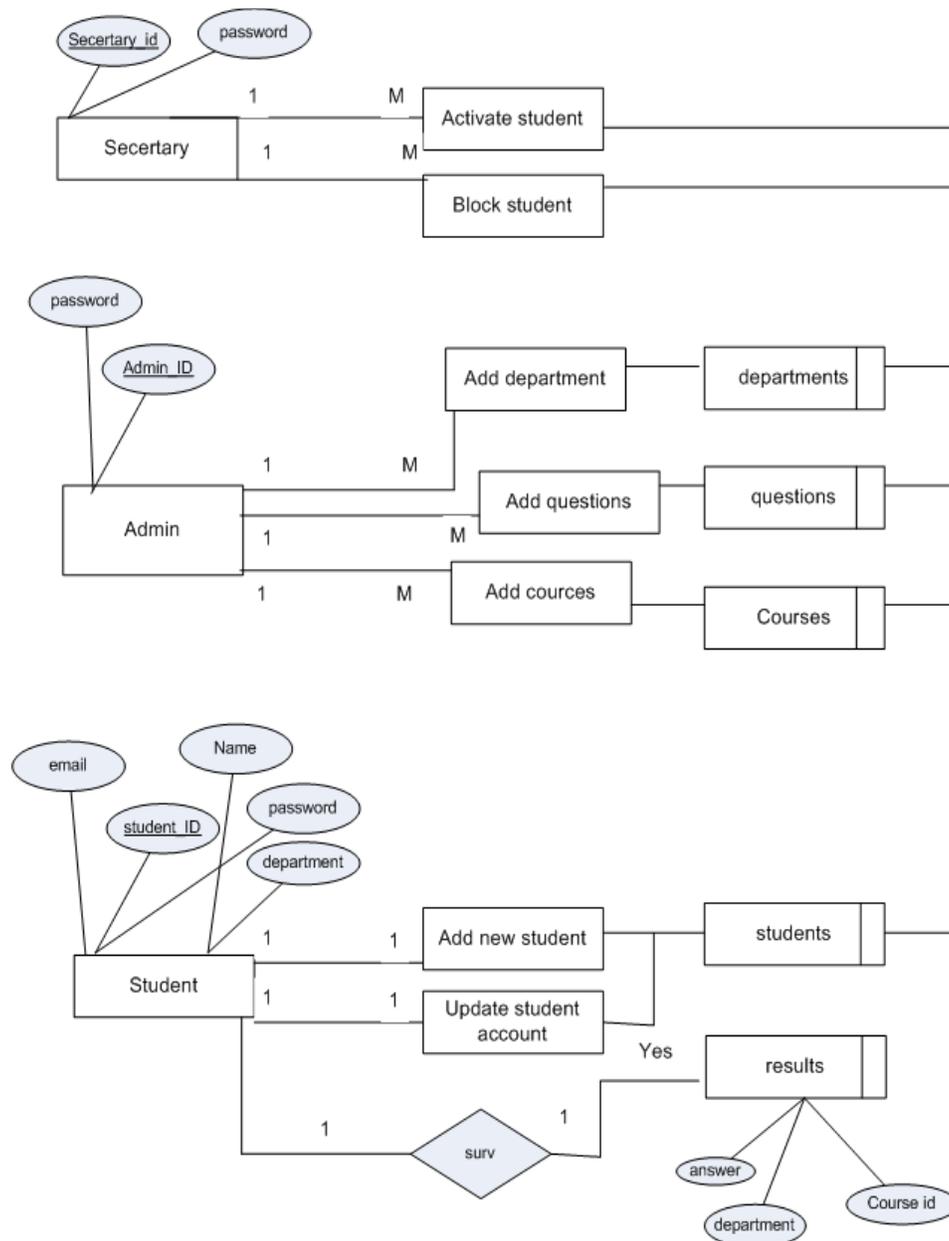


Fig. 3: ER-diagram

as: Name, Id and level. The system cannot accept the same course id twice. Then the admin can see and check the entered system courses through this partition.

The admin can update courses or even delete it form the system. Figure 8 shows the add course screen, Fig. 9 shows courses list that have added into the system and

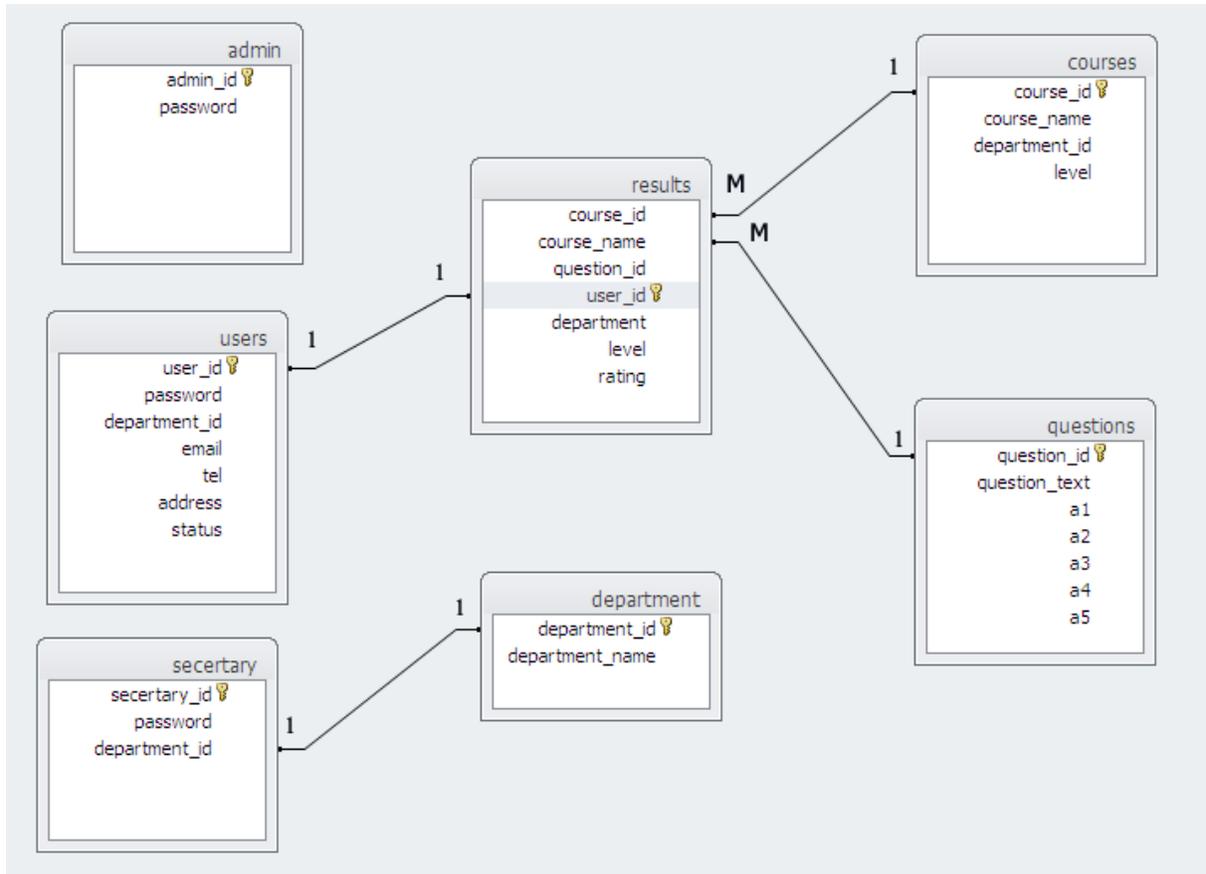


Fig. 4: Mapping ER-diagram database schema



Fig. 5: Add department



Fig. 6: Departments list

```
function registerdep($dep_name)
{
    $sql="Insert into dep (dep_name) values ('$dep_name')";
    $res=mysql_query($sql);
    if($res)
    {return true;}
    else
    {die(mysql_error());}
}
```

Fig. 7: Add new department code



Fig. 8: Add course



Fig. 9: Course list

```
function registercourse($course_id,$course_name,$level,$dep)
{
    $sql="Insert into courses (course_id,course_name,level,dep)
values('$course_id','$course_name','$level','$dep)";
    $res=mysql_query($sql);
    if($res)
    {
        return true;
    }
    else
    {
        die(mysql_error());
    }
}
```

Fig. 10: Add new department code



Fig. 11: Add question

Fig. 10 shows the add course using SQL into the database.

Add question: The admin can enter to add different survey questions to the system including its specifications. Then the admin can see and check the

entered system questions through this partition. The admin can update questions or even delete it form the system. Figure 11 shows the add question screen, Fig. 12 shows questions list that have added into the system and Fig. 13 shows the add question using SQL into the database.



Fig. 12: Questions list

```
function registerquestion($question)
{
    $sql="Insert into questions (question) values('$question')";
    $res=mysql_query($sql);
    if($res)
    {
        return true;
    }
    else
    {
        die(mysql_error());
    }
}
```

Fig. 13: Add new question code



Fig. 14: Report selection for a course

نتيجة التقييم						
رقم السؤال	موافق بشدة	موافق	غير متأكد	غير موافق	غير موافق بشدة	المتوسط
1	1	0	0	0	0	2.5
2	0	1	0	0	0	2
3	0	0	1	0	0	1.5
4	0	0	0	1	0	1
5	1	0	0	0	0	3
6	1	1	0	0	0	4.5
7	0	1	0	0	0	2
8	0	0	1	0	0	1.5
9	0	0	0	1	0	1
10	0	0	0	0	1	0.5
11	1	0	0	0	0	2.5
12	0	1	0	0	0	2
13	0	0	1	0	0	1.5
14	0	0	0	1	0	1
15	0	0	0	0	1	0.5
16	1	0	0	0	0	2.5
17	0	1	0	0	0	2
18	0	0	1	0	0	1.5
19	0	0	0	1	0	1
20	0	0	0	0	1	0.5
21	1	0	0	0	0	2.5
22	0	1	0	0	0	2
23	0	0	1	0	0	1.5
24	0	0	0	1	0	1
25	0	0	0	0	0	0
اجمالي المتوسطات						41.5

Fig. 15: Report template

```
function get_report1($course_id,$level,$dep)
{
    $sql="select distinct question_id from results where level= '$level' and course_id=
'$course_id' and dep = '$dep' order by question_id";
    $res=mysql_query($sql);
    if($res)
    {
        return $res;
    }
    else
    {
        return false;
    }
}
```

Fig. 16: Show course report code

الموقع الإلكتروني للتقييم الطلابي للمقررات

الرئيسية | دخول المسولين | دخول المبركبر | من نحن | اتصل بنا

تنشيط المستخدمين		
الرقم الاكاديمي	البريد الإلكتروني	اختيار
123456789	f@hotmail.com	<input type="checkbox"/>

[تنشيط الحساب](#)

مرحبا بالمستخدمين

تنشيط المستخدمين

إيقاف الخدمة عن المستخدمين

تسجيل الخروج

Fig. 17: Activate account

Show course report: The admin can enter to see the student survey results for a specific course, the survey is divided into questions and every question answer number is stated into the report. Figure 14 shows report selection for a course, Fig. 15 shows a report template screen and Fig. 16 shows the SQL for report generation.

Secretary: The Secretary can enter the system to activate or block students account. Figure 17 and 19

shows activate and block accounts and Fig. 18 and 20 shows this operation using SQL.

Student:

Register new account: The Student can enter to the system, fill information such as: ID no, email and department, as soon as registration process is completed, the student should wait the secretary to activate the account. Figure 21 shows register new account and Fig. 22 shows this operation using SQL.

```
function get_theusers($dep)
{
    $sql="select * from users where status = 1 and dep='$dep' order by idno ";
    $res=mysql_query($sql);
    if($res)
    {
        return $res;
    }
    else
    {
        return false;
    }
}
```

Fig. 18: Activate student code



Fig. 19: Block account

```
function get_theusers1($dep)
{
    $sql="select * from users where status = 0 and dep='$dep' order by idno ";
    $res=mysql_query($sql);
    if($res)
    {
        return $res;
    }
    else
    {
        return false;
    }
}
```

Fig. 20: Block student code

Update account: The student can enter to the system then update his/her information such as: ID no, email and department. Figure 23 and 24 show update information and this operation using SQL.

Survey operation: The student can enter to the system, select his/her department, course and level. Then he/she will be directed to the survey process which has selected. His/her choices and date will be sent to

Fig. 21: Register new account

```
function registeruser($password,$dep,$address,$email,$tel,$idno,$status){
    $sql="Insert into users (password,dep.address,email,tel.idno,status)
    values('$password','$dep','$address','$email','$tel','$idno','0')";
    $res=mysql_query($sql);
    if($res)
    {
        return true;
    }
    else
    {
        die(mysql_error());
    }
}
```

Fig. 22: Add new user code

Fig. 23: Update student information

```
function updateuser($password,$dep,$address,$email,$tel,$idno)
{
    $sql="update users set password='$password',dep ='$dep', address='$address',tel='$tel' ,
    email='$email' where idno='$idno'";
    $res=mysql_query($sql);
    if($res)
    {
        return true;
    }
    else
    {
        die(mysql_error());
    }
}
```

Fig. 24: Update user code

Fig. 25: Select department

Fig. 26: Survey form

database to be recorded. Figure 25 and 26 show the survey operation process.

RESULTS AND DISCUSSION

Through this section we discuss the user and expert evaluation in the proposed system, which is based on the objectives of the study. In this study, we evaluated the proposed Website to Evaluate the Academic Performance in College of Sciences and Arts in Unaizah by user experiments and expert user.

In the user experiments of the Proposed Website to Evaluate the Academic Performance in College of Sciences and Arts in Unaizah, we asked 32 responders (2 Lecture and 30 students) to use and discover the Proposed Website to Evaluate the Academic Performance in College of Sciences and Arts in Unaizah for several minutes and evaluate it. Figure 27 shows the respondent profile.

All the responders were lecture and students belonging to the targeted group, the scope of this study. All variables were measured using 5-points Likert scale (Strongly Disagree, Disagree, Natural, Agree and Strongly Agree). From the study, the descriptive statistics for the highest items in Table 1 and Fig. 28. The charts below detail of these 3 highest items (Fig. 29 and 30).

Interviews were conducted with seven Administrative staff in college of Sciences and Arts in Unaizah as follows:

“Dean of college of sciences and arts at Unaizah, Vice Dean of scientific departments, Vice Dean of quality unit, Vice Dean of literary departments, Coordinator of graduate studies, Director of quality assurance unit and Member of quality unit”.

Both Expert users agreed for the contribution of the proposed Website to Evaluate the Academic Performance in College of Sciences and Arts in Unaizah to ensure academic and institutional adequately meet the requirements and teaching processing needs by reducing misplaced and losing some papers relating to information of the evaluation and the answers were satisfactory. They found that the proposed Website to Evaluate the Academic Performance in College of Sciences and Arts in Unaizah is:

- Easy to use
- Language through is clear
- Interaction is clear and understandable
- Useful in the rapid retrieval of information
- Save the time
- Overcome the loss or damage of some evaluation information
- Can support students and quality unit

Respondent Profile

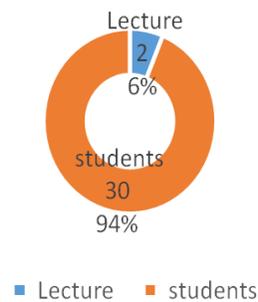


Fig. 27: Respondent profile

Online evaluation of academic system site will help students to say what their favorite courses contents

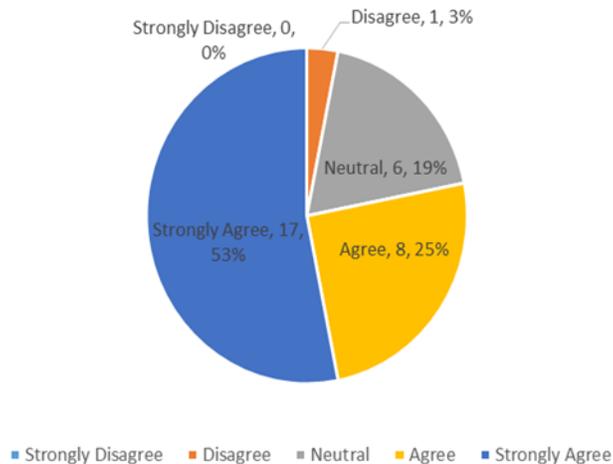


Fig. 28: Item 1 statistics

Using of Online evaluation of academic system site is easy

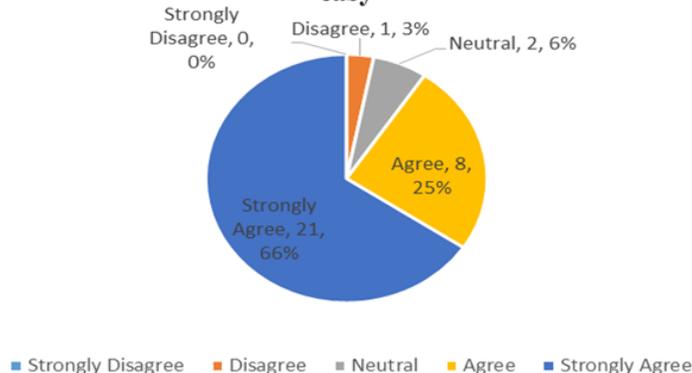


Fig. 29: Item 2 statistics

Interaction with Online evaluation of academic system site is clear and understandable

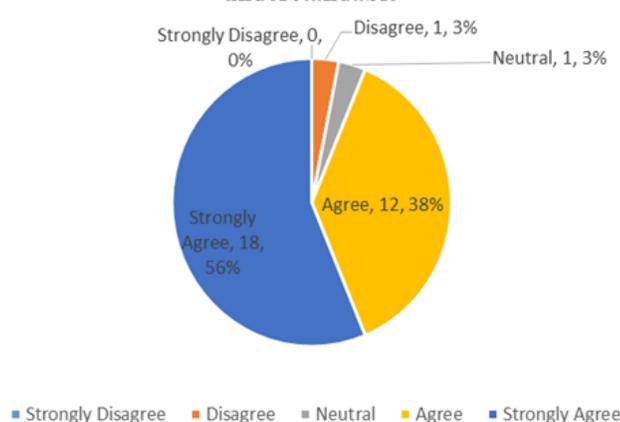


Fig. 30: Item 3 statistics

Table 1: Top 3 highest items

Items	Mean	S.D.
Online evaluation of academic system site will help students to say what their favourite courses contents	4.82	1.11
Using of Online evaluation of academic system site is easy	4.53	1.04
Interaction with Online evaluation of academic system site is clear and understandable	4.47	1.034

S.D.: Standard Deviation

The respondents and the expert users proved that the proposed Website to Evaluate the Academic Performance in College of Sciences and Arts supports students and quality unit in evaluation academic and institutional performance work in order to get the right feedback from students. Therefore, based on the results of this evaluation this study indicated that the working environment would be improved by reducing the margin of errors or damages and the loss of some papers relating to the evaluation academic and institutional performance.

CONCLUSION AND RECOMMENDATIONS

The evaluation of teaching activity is understood to be an internal evaluation that the academic institutions

carries out on its teaching staff to guarantee that teaching and other objectives of the institute are met.

The national commission for academic accreditation and assessment in kingdom of Saudi Arabia expects to meet the demands of universities and the educational needs. The evaluation of academic staff and of the teaching activities performed by them are key aspects required to identify both the level of competence of academic staff and to adopt decisions regarding their professional development. Therefore this study is providing a website and a set of procedures to ensure the quality of university academic staff and to encourage their development, by supporting students and quality unit in evaluation academic and institutional performance work in order to get the right feedback from students.

Higher education institutions should encourage, welcome and take account of student feedback which could detect problems in the teaching and learning environment early on and lead to faster, more effective improvements. Therefore study focuses on developing a website in order to analyze the datasets and in order to ensure academic and institutional adequately meet the requirements and teaching processing needs by reducing misplaced and losing some papers relating to information of the evaluation. A highly reliable and effective performance evaluation rule is essential in decision making environments. The effective evaluation is necessary in order to ensure academic and institutional adequately meet the requirements and teaching processing needs. In evaluation academic and institutional performance using the proposed website is suitable for laboratory application. This study will reduce the margin of errors or damages and the loss of some papers relating to the evaluation academic and institutional performance. It will also allow the quality unit to assess the website and determine the improvement or complications based on the results of the evaluation process through the proposed website.

Future works can intense in how to improve this design to be compatible with any scientific institution regardless the language and the nature of the course. The proposed website can be more secured and more options. It can be added and available like the ability to activate student through sending codes through SMS messages on their numbers registered into the university system and more graphical interfaces can enhance our site.

ACKNOWLEDGMENT

The authors wish to thank College of sciences and arts in unaizah-Al-Qassim University, Kingdom of Saudi Arabia. This study was supported in part by a grant from Deanship of Scientific Research, Al-Qassim University.

REFERENCES

Chou, T.Y. and G.S. Liang, 2001. Application of a fuzzy multi-criteria decision-making model for shipping company performance evaluation. *Maritime Policy Manage.*, 28(4): 375-392.

Greening, D.W. and D. Turban, 2000. Corporate social performance as a competitive advantage in attracting a quality workforce. *Bus. Soc.*, 39(3): 254-280.

Introduction: What can PHP do? year. PHP Manual. Retrieved form: <http://www.php.net/manual/en/intro-whatcando.php>.

Kossiakoff, A. and W.N. Sweet, 2011. *Systems Engineering: Principles and Practices*. 2nd Edn., John Wiley and Sons, pp: 266.

McAlearney, A.S. and M.A. Medow, 2004. Doctors' experience with handheld computers in clinical practice: Qualitative study. *BMJ*, 328(7449): 1162.

NCAAAA (National Commission for Academic Accreditation and Assessment), 2012. *The System for Quality Assurance and Accreditation*. Riyadh-Kingdom of Saudi Arabia January 2012.

NIST, 2010. Malcolm Baldrige National Quality Award 2010 Criteria for Performance Excellence, National Institute of Standards and Technology. US Department of Commerce, Washington, DC, Retrieved form: www.nist.gov/.

PHP Manual Image Processing and GD, year. Retrieved form: <http://php.net/manual/en/book.image.php>.

Saaty, T.L., 1995. *The Analytic Hierarchy Process*. RWS Publications, Pittsburgh.

Shawyun, T., 2007. An integrated QMIPS model for strategic management and quality assurance of an entrepreneurial educational institution in Thailand. *Proceeding of the Institutional Researchers' Perspectives on the Entrepreneurial Universities of the 21st Century: Some Insights from the Asia Pacific Region*, Edited by the South East Asian Association for Institutional Research, August 2007.

Sonja, P.L., 2001. Personnel selection fuzzy model. *Int. Trans. Oper. Res.*, 8(1): 89-105.