

Student Information System for Kalinga State University-Rizal Campus

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Abstract: This study aimed to improve the efficiency of the existing Student Information System of Kalinga State University Rizal campus. To attain this objective, an assessment of the existing system was done through observation and interview methods from the Acting Registrar, Campus Secretary, Faculty Members and students. Results reveal that the existing student information system met the five requirements: reusability, maintainability, security, usefulness and functionaity and evaluation on the system appeal of a quality software only to a “moderate extent”. Moreover, reliability of the existing system was given a “low extent” rating. Based on the assessment results, the existing student information system was refined to include suggestions such as the inclusion of online query access, online accessiblity of student information, and a role-based security in the system. During the try-out of the developed student information system, it was assessed with “high extent” of effectiveness in terms of all system components except for its usability and efficiency which is rated as “moderate extent”. The developed Student Information System provided greater satisfaction to the users compared with the existing system for an efficient querying of student information records, keeping the student records in a more secured manner, and it gives more reliable information records of students in Kalinga State University Rizal campus.

Keywords: Student Information, Student Information System, Information System, Kalinga State University, System Analysis and Design.

I. INTRODUCTION

The student information system is an integral part of this technology. This student information system handles every aspect of student data right from admission, class schedules, subject enrolled by the student, overall student performance, and personal information of student. All these elements are integrated into a single database, accessing and tracking data of any student happens with just a click of the mouse!

The backbone of the society, the nation is undeniably the education system. Nurturing of young talents like us Information technology students in Kalinga State University Rizal Campus, focusing on our holistic development, ensues from a sound education system through extensive use of advanced technology. Schools today are exploiting smart schooling technology to achieve these very objectives. The Student Information System is an integral part of this technology. This Student Information System handles every aspect of student data right from admission, class schedules, subject enrolled by the student, overall student performance, and personal information about the student. All these elements are integrated into a single database, accessing and tracking data of any student happens with a click of the mouse!

The benefits of Student Information System intuitive user interface with pioneering features. Maximize school management parent’s communication. Smart management of student and staff data makes chaotic schedules, stress-free and easy to manage. Enthuses student performance and success streamlines and simplifies everyday administrative tasks.

Yes, enhancing the efficiency of school administration and managing student data is effortless and easy with the Student Information System software. This system can be customized to include a whole range of activities. It can be easily accessed anytime. Schools can run the Student Management Information System on minimal hardware affordably and gain a competitive advantage of exploiting the latest in technology staying ahead in competition.

The Student Management Information System works across the entire student life cycle. Keeping control of student information and managing data has never been easy!

Statement of the Problem:

The study aimed to an assessment of the existing Student Information System which is a basis for the development of Student Information System:

Specifically, this study aimed to answer the following questions:

1. What are the characteristics of the existing student information system as assessed by the respondents along the following characteristics of software:
 - 1.1 Reusability?;
 - 1.2 Maintainability?;
 - 1.3 Security?;
 - 1.4 Usefulness and Functionality?; and
 - 1.5 Evaluation on the System Appeal?
2. What is the performance of the existing system with regards to the reliability and efficiency of generating reports and queries?
3. What features are to be proposed to enhance the effectiveness and performance of the student information system?
4. What are the characteristics of the developed student information system as assess by the respondents along the following quality characteristics of the software?
5. What is the performance of the developed system information system during enrolment procedures and keeping the records of students in terms of: the personal information, requirements submitted, class schedules and subjects, and the overall performance of a student?
6. Is there a significant difference between the effectiveness of the existing system and the developed system along the quality of characteristics of software: functionality, reliability, usability, efficiency, maintainability, and security?
7. Is there a significant difference in the performance of the existing and the developed systems respectively regarding the enrolment procedures and keeping the records of students in terms of: the personal information, admission requirements submitted, class schedules and subjects enrolled, and the overall performance of a student?

Objectives of the Study:

The general objective of the proposed study is to implement and maintain a Student Information System for Kalinga State University Rizal Campus to be more functional, reliable, usable, efficient, maintainable and more secured student information system. The system would be able to help the acting Registrar reduce her tasks especially on the delivery of enrolment procedures and the keeping of student records. Thus, eliminate the problems of the current manual system.

Specifically, the study aims:

1. To identify and know the the characteristics of the existing student information system as assessed by the respondents along the following characteristics of software in terms of: reusability, maintainability, security, usefulness and functionality, and evaluation on the system appeal.
2. To evaluate the performance of the existing system with regards to the reliability and efficiency of generating reports and queries?
3. To identify the features of the proposed study to enhance the effectiveness and performance of the student information system.
4. To identify the characteristics of the developed student information system as assess by the respondents along the following quality characteristics of the software.

5. To evaluate the performance of the developed system information system during enrolment procedures and keeping the records of students in terms of: the personal information, requirements submitted, class schedules and subjects, and the overall performance of a student.
6. To identify the significant differences between the effectiveness of the existing system and the developed system along the quality of characteristics of software: functionality, reliability, usability, efficiency, maintainability, and security.
7. To evaluate the significant differences in the performance of the existing and the developed systems respectively regarding the enrolment procedures and keeping the records of students in terms of: the personal information, requirements submitted, class schedules and subjects, and the overall performance of a student.

2. REVIEW OF RELATED LITERATURE

According to the Online-Student Information System of Benguet State University (2013) it would be a new way of record management and transaction processing that would achieve efficiency on processing student information. It would be a great help to the administrative personnel, academic personnel, grantors or stakeholders, and students in updating, retrieving and generating student data. The main objective of the study was to design as a standalone student information system of Benguet State University (2012). In order to achieve the general objective, the following specific objectives of the study were identified:

1. To identify the information requirements in the existing student information system of BSU.
2. To identify the problems encountered in the existing system.
3. To identify the information requirements needed.
4. To determine appropriate security and control measures are needed for student information system.
5. To determine the benefits of a student information system as perceived by:
 - a. Administration offices;
 - b. Academic offices;
 - c. “grantors”/stakeholders;
 - d. Parents; and
 - e. Students;

According to Swartz(2013), SIS process is typically completed into students school career and encapsulates each of the facets of knowledge built up and literacy value, including learning what type of SIS is available, finding and accessing system sequence, evaluating tools for the information and then synthesizing the student information system into certain and product for a better career patterns as it seemed like the ideal project to focus SIS and relate it to ample literacy instruction around. While the students had all performed database searches before, they were less likely to have taken advantage of the search management tools available to them through educational database, how to set up automatic searches to help streamline the research process.

Pacio (2013) on her thesis entitled “Online Student Information System of Benguet State University” gave emphasis that as main goal of the school “to generate and disseminate new knowledge and technologies that will promote sustainable resource development and enrich the competent and effective services geared towards efficiency and economy” which is inconsistent with the existing student information system of the Kalinga State University Rizal campus. <http://www.auamii.com/jiir/vol-01/issue-04/4pacio.pdf>

Richard (2012) emphasized that information about students is vital, but time-consuming to manage and it is essential that the most effective tools be used to aid both staff and students go about their work and studies. The Cambridge Student Information System (CAMSIS) replaced various student records system used by the colleges, departments and universities. CAMSIS provides comprehensive and accurate information about student body and also improves data quality, reduce the administrative burden dramatically and provides better services to both academic staff and students.

According to Perret (2012), the integration of SIS in the U.S.A. setting with resources to higher education systems determining that certain group of students can acquire and gain effective knowledge literacy skills through the SIS process and understanding the value of education service crafted to provide best teachings as possible.

According to Evangelista (2011) the University's Student Information System (SIS) of Nueva Vizcaya State University is a secure, web accessible interactive computer system that allows user access to grade reports, transcripts, schedule of classes, and remaining balance for the semester and register for classes online. Through the system, students would be assigned a unique identification number. All data to and from the university would use that unique identifier. The use of individual student records would: 1) Increase the admissions capacity to follow a student's progress over time; 2) provide better quality data to drive more enlightened policy decisions resulting in enhanced educational opportunities for all students; 3) reduce data collection burden through a web enabled SIS; and 4) as a tool of parents in monitoring the academic performance of their children. <http://student.mit.edu/cgi-docs/govwbin1.html>

According to the Student Record System has also reports that provide the AAMC, constituents and other researchers with statistical information on such things as enrolment profiles, student retention patterns and graduation rates. Custom reports are available on request. <http://www.aamc.org/services/srs/>

According to Campus-Wide Information Systems (CWIS)2011 are the computer-based systems that process various data to generate information primarily implemented in universities. From the viewpoint of data being processed, CWISs can be categorized into three groups: those handling primary data such as texts, journals, reports, various digital data, public-domain software and shareware, multimedia materials, those processing secondary resources including catalogs, metadata, journal lists, and those aiding communications including electronic mailing, electronic boards, and integrated information systems. To be useful, CWISs need to be used effectively accomplishing the system's goal, and managed by an effective growth plan (Semiawan and Middleton, 2010). Users will perceive the value of the CWIS and the information available by the system. Strategic information systems are in need for the successful use of the systems, considering the information needs of the users in the flux of overall educational environment. <file:///C:/Users/Aethan%20Simone/Downloads/4733-14545-1-PB.pdf>

According to Marrero (2011) in his study entitled "Student Information System for the University of the Cordilleras" stressed that the concept of Information Systems (IS) emerged in the early 1960s. More often, when information system is defined, the field Information Science is always associated, IS is an academic field that deals with the generation, collection, organization, storage, retrieval, and dissemination of recorded knowledge. Furthermore, it is a collection of related components designed to support operations, management, and decision making in an organization. Generally, IS is supposed to inform people. Information System supports people or users in making intelligent decisions based upon the information derived from reliable data.

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3. METHODOLOGY AND DISCUSSION OF FINDINGS

This section discusses the methodology used in designing and developing the proposed system and discussion of findings, it also explain the data gathering procedures, the different techniques and different sources of data.

Research Design:

The study aimed to assess the extent of compliance of the student information system of Kalinga State University Rizal campus. Thus, the study used the descriptive-evaluation research design. This method involves the collection of data through survey questionnaire and observations in order to test assumptions or to answer questions concerning current status of the subject of study. The descriptive-evaluation design was deemed suitable for the study because it involved a comprehensive analysis of the system's input, process and output component.

Also, the System Analysis Design and Structured System Analysis was used in the development involved user's validation and verification to ascertain result.

Respondents of the Study:

The Kalinga State University Rizal campus has a total of 16 employees, and an estimated of 296 enrollees for the first semester of school year 2015-2016. Of the 16 employees, 14 faculty members, a Campus Dean, and one campus secretary. They were tapped to serve as respondents of the survey questionnaire. At the same time, 150 students were asked to answer the survey questionnaire.

Instrumentation:

The instruments used to gather the data pertinent to this study were documentary analysis, direct observation and ocular inspection, survey questionnaires, and interview guides.

Documentary Analysis on school records such as enrollment forms, class subjects and schedules, control sheets and grading sheets. The survey questionnaires were developed based on the characteristics and sub-characteristics of ISO Software Quality Model 9126.

Data Gathering Procedures:

After obtaining permission for the conduct of the study, the researcher administered a survey questionnaire to obtain the respondents' assessment of the existing student information system along the identifies characteristics of the software.

1. An interview and ocular observation were conducted to assess the performance of the existing system with regards to the enrolment procedures and keeping of students' records.
2. After the development of the proposed student information system the respondents assessed its reusability, maintainability, security, usefulness and functionality, and evaluation on the system appeal.

Data Analysis:

The following were used in order to come up with valid analyses:

The Frequency and Percentage was used to get clear description of the respondents' representation in every class.

The Weighted Mean was used to treat respondents' scale responses in every item and category mentioned in the self-made questionnaire.

T-test of dependent samples was used to test the significant difference between the existing system and the developed system in terms of six characteristics of quality system, namely: Data Reusability, Data Maintainability, security, usefulness and functionality, and evaluation on the system appeal. Likewise, the t-test was also used to determine the significant difference in the performance of both systems in terms of enrolment procedures and keeping of students record.

DISCUSSION OF FINDINGS:

The present state of the existing student information system as perceived by the respondents was found to have met the five requirements of quality software, namely: Data Reusability, Data Maintainability, security, usefulness and functionality, and evaluation on the system appeal only to a "moderate extent". Data Reusability of the existing system was given a "low extent" rating.

1. With regards to the enrolment procedures and the keeping of records of students, the existing system was given an overall rating of "fair" by the respondents.
2. To enhance the effectiveness and performance of the existing student information system, it is proposed that features such as online student information system be incorporated.
3. The developed student information system was perceived to be effective to a "high extent" by the respondents along the characteristics of quality software namely: Data Reusability, Data Maintainability, security, usefulness and

functionality, and evaluation on the system appeal. On the other hand, “moderately extent” rating was given to usability and efficiency.

4. The general performance of the developed student information system was found to be “very good” by respondents.
5. The data generated by the study showed that the developed student information system is superior when compared to the existing system along the characteristics of Data Reusability, Data Maintainability, security, usefulness and functionality, and evaluation on the system appeal.
6. The developed Student Information System provided greater satisfaction to the users compared with the existing system with regards to the delivery of enrolment procedures and keeping of student information records.

4. RECOMMENDATION

From the study’s findings and conclusions, the researcher recommends the following:

1. It is recommended that the student information system be implemented in order to improve the delivery of enrolment procedures and record keeping of student information as well as to address the problems encountered with the existing system.
2. The developed system should be given attention for further study and enhancement especially in terms of its usability and efficiency.
3. Additional measures to minimize the drawbacks of using the student information system should be studied and adopted, particularly if the online student information system will be realized.
4. A full time technically proficient system administrator should be appointed to handle system administration tasks to ensure sustainability of the system. To ensure this, training must be provided.
5. The Acting Registrar, as well as faculty members and students should be trained or at least be oriented on how to use the developed Student Information System.
6. The availability of key features such as online inquiry of admission requirements, personal information, student subjects enrolled and class schedules, and knowing the overall performance of a student.

5. CONCLUSIONS

Based on the findings, the following conclusions were drawn:

It is concluded that automation of existing student information system, such as the delivery of enrolment procedures and keeping the records of students information such as: keeping of admission requirements during enrolment, personal information, student subjects enrolled and class schedules, and knowing the overall performance of students will maximize the utilization of the full range of benefits of Information and Communications Technology. The performance of the developed Student Information System is superior, more efficient and effective than the existing student information system of the Kalinga State University Rizal campus. With regards to the quality characteristics that were used to evaluate both the existing and the developed Student Information System, it is also concluded that the developed Student Information System is much better than the existing system.

In a nutshell, all the stakeholders, such as the faculty members, students and the administrators found that the developed Student Information System had met their expectations with regards to the student information system.

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