

Online Student Academic Performance Monitoring and Evaluation System of the Quirino State University

Arsenia V. Duldulao¹, Jay - R R. Duldulao²

Quirino State University

Abstract: *The advent of information technology poses a considerable impact in the educational systems. The creations of computerized systems have helped improve time - consuming, repetitive and laborious data processing activities like test scoring, grade computation and student records management. Quirino State University has started using LAN - based system called Student Information and Accounting System (SIAS) which works faster and more efficient means of student and accounting records management system to improve data processing activities. This automates enrolment, assessment of fees and posting of students' grades. This study focused on the online posting and checking of grades adding a feature for parents who wants to check their children's grades anytime, anywhere.*

Keywords: Academic Performance, Academic Performance Monitoring, Evaluation System, SIAS

1. Introduction

In educational institutions, success is measured by academic performance or how well a student meets standards set out by a particular institution. As career competition grows ever fiercer in the working world, the importance of students doing well in school has caught the attention of parents, legislators and government education.

Although education is not the only road to success in the working world, much effort is made to identify, evaluate, track and encourage the progress of students in schools. Parents care about their child's academic performance because they believe good academic results will provide more career choices and job security. Schools, though invested in fostering good academic habits for the same reason, are also often influenced by concerns about the school's reputation and the possibility of monetary aid from government institutions, which can hinge on the overall academic performance of the school. State and federal departments of education are charged with improving schools, and so devise methods of measuring success in order to create plans for improvement. (Bell, M. J., 2018)

Academic performance is commonly measured by examinations or continuous assessment. Generally, there is no general agreement on how it is best tested or which aspects are most important - procedural knowledge such as skills or declarative knowledge such as facts. Being the outcome of education, academic performance is the extent to which a student, a teacher or an institution has achieved educational goals. (Bamidele, 2017)

Student information system (SIS) is a software application for educational establishments to manage student data. Student information systems provide capabilities for entering student test and other assessment scores through an electronic grade book, building student schedules, tracking student attendance and managing many other student - related data needs in a school, college or university.

The strong implication for education is that skills in effective online searching should occupy more value and more important place within the education curriculum at all levels where the adaptation of SIS is most valued for academe effectiveness. From the perspective of the individual student, SIS incorporates enormously increased potential for representing and manipulating information in range of structured education paradigms and strategic study forms as appropriate for a justifiable application of diverse learning styles. Furthermore, the student information systems do provide greater range of ways through which learners can express their knowledge, including the publication of multimedia presentations to the world through the Internet. Aside from some of the information system know - how, it is needed that certain students must struggle with the inclusion to discover how to complete comprehensive reviews of such research studies, to learn how to evaluate sources within the context of their projects and citing properly the different sources within their theses or dissertations (Cosidon, 2016).

Because the SIS process is typically completed early into the 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 end 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 databases and how to set up automatic searches to help streamline the research process (Fyffe and Walter, 2005).

Institutions should designate one clear point of responsibility for maintaining complete, accurate and up - to - date records on every student covering all aspects of the relationship. They should also tightly control access to student records to prevent unauthorized use, alteration, removal or destruction

Volume 10 Issue 10, October 2021

www.ijsr.net

[Licensed Under Creative Commons Attribution CC BY](https://creativecommons.org/licenses/by/4.0/)

of the records themselves and unauthorized disclosure of the information they contain. Only those members of staff who need them to do their work should have access to student records, and their access should be restricted to records of the direct relationship and not to the content of the whole file.

It is for these reasons that the researchers proposed an online student academic performance monitoring system for the Quirino State University to secure the grades of students and to be able to determine the performance of students during midterm and final grading.

This study was also proposed to cater the parents of students for them to be acquainted with their children's academic performance. The researchers believes that if a student's academic performance is closely monitored by either the adviser or the parents, there is a possibility that the student will not have failing grades or better, do well in his chosen field.

Objective of the Study

The main objective of this study was to design and develop Online Student Academic Performance Monitoring and Evaluation of the Quirino State University.

2. Methodology

The methodology that was used for carrying out the life cycle of the proposed system is Feature Driven Development (FDD). This methodology was used in the design and development of the proposed Online Student Academic Performance Monitoring and Evaluation System of Quirino State University.

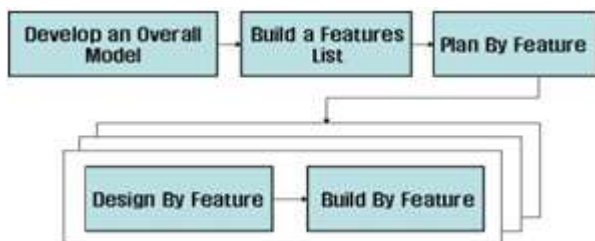


Figure 1: FDD Stages

Data Gathering Techniques

The descriptive survey method was used in this study. The researchers conducted an interview, used questionnaires, documentary analysis and observation to be able to understand how users interact in the work context to the current information systems.

Interview

This method helped much in learning the different methods and practices employed in the evaluation of students in the University. The deans of the different colleges were interviewed for the students' records management.

Document Analysis

The researchers studied the existing forms on student information and the evaluation form of students. Documents and processes regarding the monitoring of academic

performance of students of the university were also analyzed.

Observation

The researchers observed the current procedures done in the monitoring of the academic performance of the students in the Quirino State University. The procedures of the evaluation of students were closely observed to study the correct process of the current student academic performance monitoring.

Sources of Data

In this study, sources of data were gathered from the different faculty, staff and the clientele of the University. The main sources of data were collected from the University Registrar, College Deans, the University Director for Instruction and the students as well as their parents.

3. Findings

The Current Procedures in Monitoring the Academic Performance and Evaluation of Students

The registrar of the university, the college deans, academic advisers, the director for instruction and program coordinators were interviewed to know and be familiar with the procedures of the existing system in evaluating the students as well as the monitoring of their academic performance. With this, the researchers was able to know the current procedures of the present system.

In the University, the difficulty of monitoring the academic performance of the students is shouldered by the college deans together with the designated advisers. But the dean alone is the one responsible for checking the grade sheets and class records, and collects grade sheets from subject instructors. For purposes of simplifying the task of monitoring academic performance, the dean prepares a summary of grades by course, by year level and by section. Based on the summary of grades, students who incurred failing marks or incomplete grades are identified. Individual evaluation sheets for these students are then prepared for academic counselling and for purposes of assisting these students in identifying subjects to be taken for the succeeding terms.

During enrolment, students are required to fill out the Student Cumulative form which contains the personal information of individual students. This form includes important details of the student like name, home address, birth date, gender, ethnic affiliation, name of father and mother and other supporting data like e - mail address and contact number. These forms are kept by the deans in individual folders inside a filing cabinet for future use. These forms in the cabinet are arranged according to the school year and the semester they applied for. Aside from the copy of the deans, the registrar also requires the same information but is being out in the enrolment form of the students.

Every student has an individual evaluation form. During enrolment, the advisers require the students to get a copy of their evaluation of grades from the registrar and then they manually write the grades into the individual evaluation

forms provided by the deans/advisers. Together with this process, advisers conduct a review of grades during the last semester with their students to assist in their progress during the working semester. This will be an opportunity for the advisers and students to discuss topics about the students' progress towards overall expectations and goals, and students' performance during the previous semester.

Process in changing of grades. In the University, official grades in course subjects may be changed by the subject instructor or the department dean up to one year after the original grading deadline. Changes are valid if reasons given are approved by the Academic Council or the Director for Instruction.

When duly filed in the Office of the University Registrar, grades become final and cannot be subjected to change or revision unless there is error in computation or transcription or student's work is unintentionally overlooked.

If a student questions a final grade based on the grading part of a specific piece of work like a part of a test on the basis of one of the allowable factors mentioned above, the instructor may review the entire piece of work in question for the purpose of determining whether the final grade is a proper one. In general, changing the final grade is permitted on the basis of the allowable factors already mentioned whether an error is discovered by the student or the instructor; however, changing a grade is not permitted by reason of revision of judgment on the part of the instructor.

The problems encountered in the current processes of monitoring and evaluating student performance of Quirino State University

Based on the observations and interviews done by the researchers, the following are the problems of the University in the academic monitoring and evaluation of student performance.

Redundant, and time - consuming data entry

Posting of grades and preparation of evaluation sheets are done by both the academic adviser and the dean. Aside from the summary of grades, the dean needs to prepare individual Evaluation Form of students to identify subjects to be taken during enrolment.

Bulky and unsecured paper - based academic records

Academic records of students are printed on paper. These are filed alphabetically on a folder and placed in a storage cabinet. During enrolment period, individual files are detached from the folder for updating and analysis. This practice may cause misplaced individual records which demands unnecessary reconstruction of records. With the increasing enrolment in the college, copies of students' academic records also piling up which poses storage problems.

Slow process of credits evaluation

The usual process of preparing and updating evaluation sheets of students is rather slow considering the number of designated personnel performing such task. Consequently, transferees and shifters often have to wait for some time before they can be enrolled; likewise, students who are

performing well have to wait after enrolment before they can apply for academic scholarships due to the attention demanded by students with academic deficiencies.

Prolonged agony of students and parents

Not immediately knowing students' grade makes the students as well as parents agitated because of their agony. These are the parents abroad or in other places as well as the siblings and other family members who are helping to finance the study of the students. There is a need for them to be acquainted with the student's performance inside the university.

Table 1: Identified Problems of the Current System and the Features of the Proposed System

<i>Problems</i>	<i>Features</i>
1. Redundant, time - consuming data entry	Diminish repetitive data entry activities.
2. Bulky, unsecured paper - based academic records	Automated master list of students
3. Slow process of credits evaluation	Fast processing of credits evaluation
4. Prolonged agony of students and parents	A ready account for either parents or students

Features of the QSU Online Student Academic Performance Monitoring and Evaluation System

Based on the collated results of the observations and interviews done by the researchers, features were selected that would help resolve if not minimize the issues and difficulties encountered in the present academic performance monitoring and evaluation of QSU. As the proposed system shall minimize repetitive data entry activities, the system shall allow data input only once and provides automatic processing instructions so that the data could be manipulated to generate required reports and retrieved when needed.

The following are the main features of the system which can aid the QSU in the evaluation and monitoring of grades of the students:

Reduce data entry

This feature allows data to be inputted only once to provide programmed processing instructions so that the data could be manipulated to generate required reports and retrieved when needed.

Automated master list of students

The system provides an electronic database for the storage of data which lessens the paper workload and storage problems and solves misplacement of records. The system also provides a masterlist of students each of which contains an updated grades of each student per semester enrolled including the number of units taken per semester. The proposed system also creates a backup copy of the data files to ensure that inputted data are not lost. Moreover, provisions to secure the database are included to safeguard the stored data from unauthorized access.

Fast processing of credits evaluation

The proposed system contains a complete listing of subjects required in the courses offered by the university. This list is used as basis in determining list of deficiencies for purposes

of identifying subjects to be enrolled by a student. Once the grades of students are complete, the system provides evaluation of grades which can be easily viewed by either the student or the parent/guardian. A master list of students with subject deficiencies is generated to immediately identify students who need academic counselling; likewise, a master list of students who qualify for academic scholarship are also generated by the system to provide incentives to students who are performing well in their academic subjects.

An account ready for parents and students. The system provides an account for the students so that they can easily check and access their grades anytime, anywhere once the grades in the database are updated. Same feature is also prearranged for the parents by using their children's complete name and birth date.

Perceived Benefits of the System

The registrar of the university, deans, and selected students assessed the proposed system. The researchers interviewed and discussed with them to identify the possible benefits of the system. With the information gathered by the researchers, the proposed OSAPMES - QSU has the following benefits:

Student evaluation is done in timely manner

The proposed OSAPMES - QSU helps the students to know their grades in a particular semester. Students will also be kept updated of their academic standing in school. Their parents can track down the individual grades of their children in school. The proposed system also minimizes the time, effort, and money before going to school during enrolment.

Easy access of grades

The proposed system displays the relevant information of students needed for the academic performance monitoring.

The evaluation of grades is displayed and may be viewed by the deans and involved students anytime. Although the system does not provide the official grades, there is a ready reference that can be accessed anytime, anywhere.

Organized Records

Since all information of the students shall be stored in a single database, the records are already organized and easy to manage for ready reference and future use.

Fast Processing and Generation of Reports

The generation of reports in the manual system requires several processes. The preparation of these reports consumes a lot of time. With the proposed system reports are processed, and generated easily, accurately and timely.

Easy Monitoring of Students' Grades

The OSAPMES provides an easy access of the parents and students on the grades. With the midterm and final grades posted, they can readily see which subjects need an immediate action or subjects where they incurred failing grades.

On the part of the deans, they can simply view the list of students with deficiencies so that they will know who needs direct and close attention and guidance.

System Design

This part of the study discusses the conceptual, logical and physical design of the system. These are considerations in the development of the system.

Conceptual Design

The main objective of the proposed OSAPMES - QSU is to automate the processes and minimize the procedures done in the academic performance monitoring and evaluation of students in QSU.

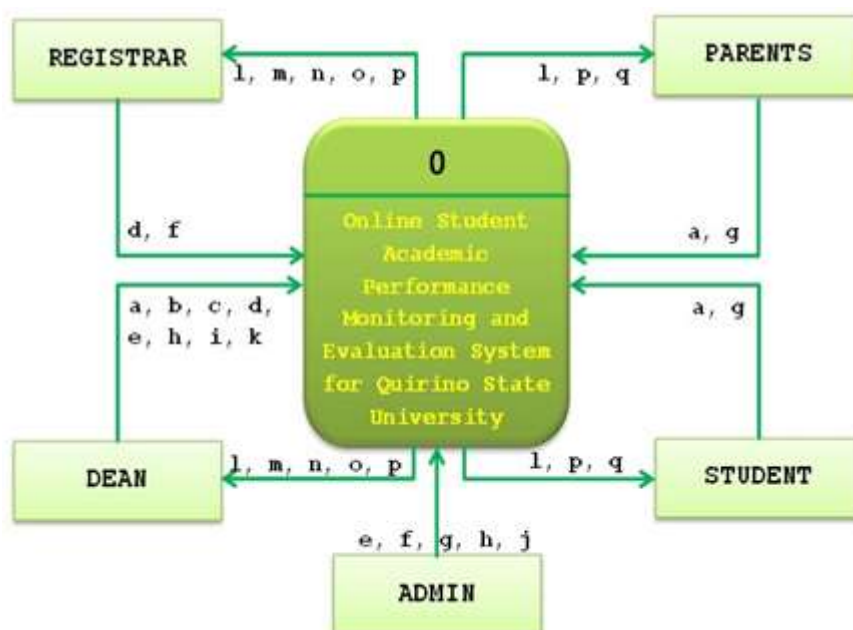


Figure 2: Context Level Data Flow Diagram

Legend:

a) Department

b) Approved Resolution

c) Individual Student Evaluation Sheet

- d) Master list of Students
- e) Students w/ Deficiencies
- f) Certification of Grades
- g) Student's Profile
- h) Copy of Grades
- i) Personal Data of Students
- j) Course Information
- k) Subject Information
- l) Grades obtained per subject enrolled
- m) Dean's Account

- n) Registrar's Account
- o) Student's/Parent's Account
- p) Subject Teacher's data
- q) Curricula

Figure 2 shows the context level data flow diagram of the system. It signifies that there are four users of different levels.

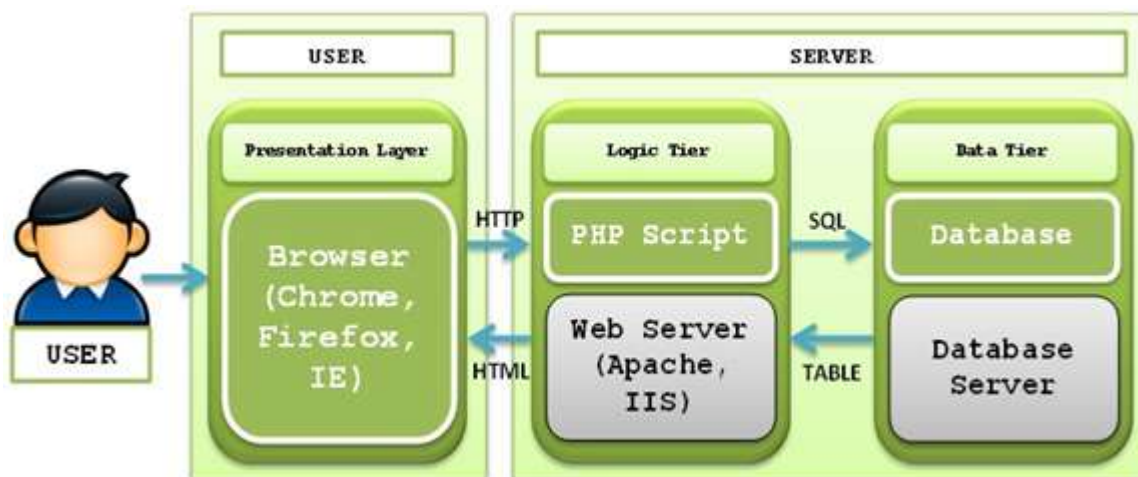


Figure 3: OSAPMES - QSU System Architecture

Logical and Physical Design. The OSAPMES - QSU is designed and implemented in three - tier server architecture as illustrated in figure 3. Three - tier Architecture is a client server architecture in which the user interface, functional process logic, computer data storage and data access are developed and maintained as independent modules, most often of separate platforms. Database structure shows the definition of each field in the database.

4. Analysis

Based on the findings of the study, the current processes of monitoring and evaluating student performance depends on the college deans with the help of batch advisers. Summary of grades by course, by year level and by section was prepared to identify students who incurred failing marks or incomplete grades. Individual evaluation sheets of regular, irregular and transferee students were also prepared every enrolment to identify the subjects to be enrolled.

The issues on using the existing student academic performance monitoring and evaluation leads to some difficulties and problems, some of which are addressed by the Online Student Academic Performance Monitoring and Evaluation System of the QSU. The proposed Online Student Academic Performance Monitoring and Evaluation System of the QSU was designed and developed to meet if not all, some of the requirements, thus, a better alternative to facilitate monitoring of academic performance of students.

5. Recommendations

From the foregoing analysis, the proponents of the study endorses that the developed system should provide

additional statistical reports such as students' survival rate, scholarship programs classified by course and by year level aside from the academic scholars and the inclusion of family income in the profile of students to easily identify those students who belong to the poverty line. An inclusion of a Class Scheduling System should also be integrated in the proposed system. The proposed system should also be further tested and should be implemented in all the campuses of the university.

References

- [1] Automotive Mechanics Conference 2007. IEEE Computer Society Washington, DC, USA 354 - 359
- [2] Bamidele, M. (2017), "Relationship Between Reading and Academic Performance of Students with Learning Disability", March 30, 2017
- [3] Bell, Melissa (2018), "Define Academic Performance", June 25, 2018
- [4] Cosidon, E. (2016), "Student Information System for Kalinga State University Rizal Campus", International Journal of Computer Science and Information Technology Research ISSN 2348 - 120X (online) Vol.4, Issue 2, pp: (223 - 229), April - June 2016
- [5] Fyffe, Richard; Walter, Scott. Building a new future: Preparing "Future faculty" and "Responsible conduct of research" programs as a venue for scholarly communication discussions. College & Research Libraries News, [S. l.], v.66, n.9, p.654 - 663, oct.2005. ISSN 2150 - 6698. Available at: <https://crln.acrl.org/index.php/crlnews/article/view/7508>

- [7] Galang, A. A. D. “Enrolment Management System for Data Center College of the Philippines”, Laoag City. St. Paul University Philippines, pp.10 - 120, 2012.
- [8] Karimi, F. K. (2001) Factors contributing to the academic performance of students in a private university in Kenya: A case of Daystar University. The Learner Collection International Journal of Learning, 17 (8), 63 - 76.
- [9] Liao. “Student Information System of the College of Hospitality Industry Management. ” College of Information Technology Cagayan State University. Carig Sur, Tuguegarao City, Cagayan, 2010.
- [10] Laudon&Laudon, C. “Management Information System”, Revised Edition. New Delhi: New Age International Publishers, 2010.
- [11] Marrero, S. “Student Information System for the University of the Cordilleras”. A master project study. University of the Cordilleras.
- [12] Ogor, E. N. (2007). Student Academic Performance Monitoring and Evaluation Using Data Mining Techniques. Electronics, Robotics and Automotive Mechanics Conference, CERMA '07 Proceedings of the Electronics, Robotics and
- [13] Pacio, R. “Online Student Information System of Benguet State University”. (OSIS - BSU), Philippines, 2013.