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Integrated Management Information System for Curriculum in University

by Ika Ratna Indra Astutik

Integrated Management Information System for Curriculum in University

Integrated Management Information System for Curriculum in University

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Abstract. In university, a curriculum is one of the factors that play an important role in preparing graduated student that have High quality and qualified to compete in the era of globalization. The curriculum is also used as a reference in determining the learning achievement and also used as implementation guidelines in the faculty. Learning outcome in the curriculum Described in the courses that are used as material for study or teaching materials for lecturers. This study aims to create a management information system for curriculum that can assist the faculty, Academic Administration Bureau and Institute of Study and Development of education in Managing and evaluation a curriculum, especially when there is a new development in the curriculum. This research uses the Waterfall Software Development Life Cycle (SDLC) model for analyzing the flow of information system such as: (1) Requirement and Analysis, (2) System Design, (3) Implementation, (4) Integration and Testing, (5) Deployment of the system, (6) Maintenance. The system is also supported by twitter bootstrap framework technology that makes the system simple, easier and responsive.

1. Introduction

The higher education curriculum is a program to produce graduates, so the program should ensure that its graduates have qualifications equivalent to the agreed qualifications. [1] Some colleges and universities have developed their curriculum based on educational policy, learning outcome or discussions of faculties. [2] Graduate quality is based on the level of ability expressed in the learning achievement competencies (learning outcomes). From the formulation of learning achievement can be done by using the subject that used as teaching material in learning in college. Good curriculum management can improve the quality of college graduates. Where the quality of graduates or human resources can be seen from the achievement of learning from the curriculum formulated by each faculty at the University.

At the University The current curriculum was evaluated, and sometimes a new concept curriculum was written that make continuous challenge in higher education or in faculties. [3] The curriculum evaluated by the Academic Administration Bureau and expert supervision (Institute of Study and Development of education in Managing and evaluation a curriculum) discusses with the teachers the necessary adjustments needed to make the curriculum relevant to their settings. [4]

The faculty prepares a new curriculum based on applicable government regulations and based on their respective associations of faculties. Which Curriculum changes require strategic and operational management of wide-ranging adjustments within academia. This kind of change might include

introducing new teaching and learning, setting out a vision, academics developing new skills and expertise and changing philosophy of faculties. [5]

Here, the purpose of this study was to create a web-based responsive curriculum management information system using PHP programming language, database Postgresql and twitter Bootstrap, where the faculty can activate the course, determine the course prerequisites and do the scheduling of the course without having to submit the file to expert supervision (the Institute of Study and Development of education in Managing and evaluation a curriculum) and also can do monitoring and evaluation if the courses are activated and the schedule in the plotting is not appropriate. The curriculum expert supervision can also check, control and validate the data, especially the teaching load of lecturers.

2. Experimental Method

The development of this application using the Waterfall approach from Software Development Life Cycle Model (SDLC). Which has several stages, such as: Requirement and Analysis, System Design, Implementation, Integration and Testing, Deployment of the system and Maintenance. The first step is Requirement and Analysys information system which is collecting data and information that needed through literature studies, observations and interviews with the head of faculties and expert supervision (head and staff of Development of education in Managing and evaluating a curriculum) and Academic Administration Bureau.

Then analysis of hardware requirements and software requirements required in building information systems. Where this stage determines the minimum hardware specifications needed to run the system as well as to know the software needed in the manufacture of the system. After all the information is obtained, the information system will be designed in accordance with the results of the requirement analysis. The design of the system includes database design, interface, and the flow of the system. The results of the next draft will be implemented through coding or scripting program with the PHP programming language, [6] Twitter Bootsrap and the Postgres database management system. After the system is completed, then the system tested to know if system according what is expected or not.

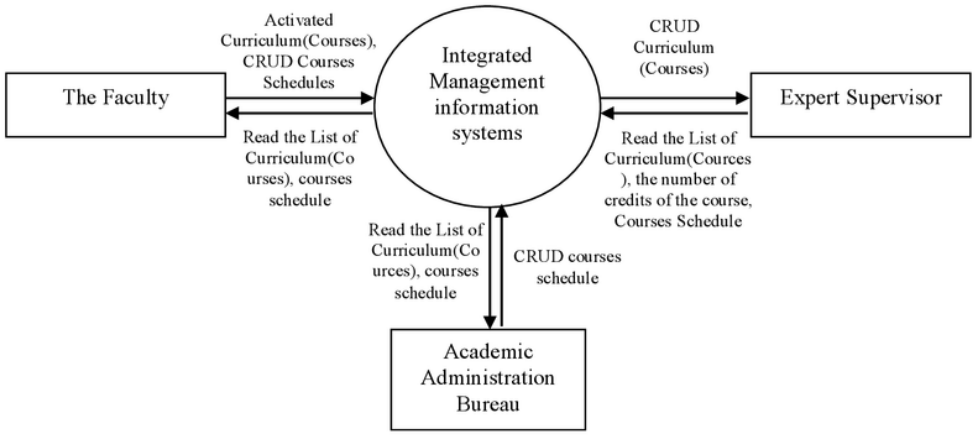

Figure 1. Data Flow Diagram Integrated Management Information System in university

Figure 1 shows that the university has an integrated information system for Program Study, Expert Supervisor and Academic Administration Bureau. Each user has different access and responsibility. The First user is Faculty, not only can activated courses in a curriculum that uses in the academic year in progress. But also have the list of the curriculum either the old or the new. Faculty also can arrange

a college schedule for teachers and students. The second user is expert supervisor that can create,read,update, and delete curriculum that is not in accordance with the guidebook prepared by the faculty, also can read the list of all curriculum in university and can read the course schedule that arranged by faculty. The last user is Academin Administration Bueau, this user can read all courses in the curriculum and can create, read, update and delete courses schedule if there is teachers exchanges because overloaded teaching according to the credit load that the university policy. Despite having a different information system, but data storage remains in the same database, because the information system is already integrated.

3. Results and Discussion

Figure 2 shows the first appearance of the curriculum information system. To be able to access the system user information must identify by signing in form sign in system. After signing in successfully, then the user can access menu in the system include: home, table courses list, input data curriculum courses in form, form validation courses that activated by faculty, form input courses schedules, form validation of the teachers learning plan.

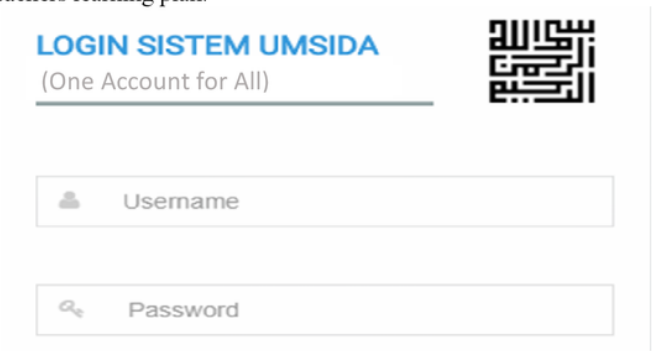

Figure 2. Form Sign in information system.

Figure 3 shows the main page view of the system dedicated to the expert supervisor. This page is useful for displaying data on the number of credits of each course of study active in the current academic year.

Figure 3. Form Home information system for curriculum

Figure 4 shows to process the course (a) view and search the course data is done on the page read the course data. (b) As for entering and changing the subject data using the course form. In this form the user input data course code, the name of the course, department, credits of course, semesters of the course will be taught, subject group, the type of course, the status of the course and whether the subject is the concentration course or not.

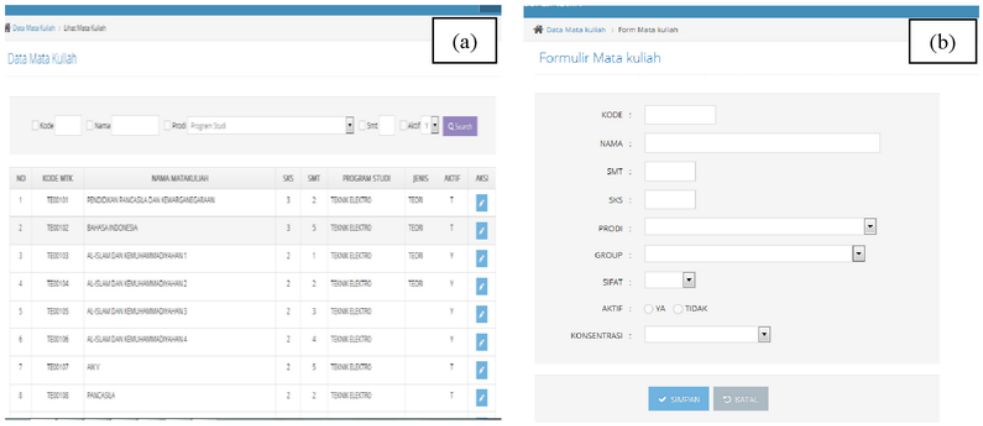

Figure 4. The Form Read the list of courses and form input the course

The curriculum information system for faculty is explained in **Figure 5**. Faculty can view the data of the existing curricula in information systems for the faculty. (a) In addition the system makes it easy to search data curriculum based on code courses, the name of the course and semester. (b) The faculty can also enable the courses that will be used during the current academic year.

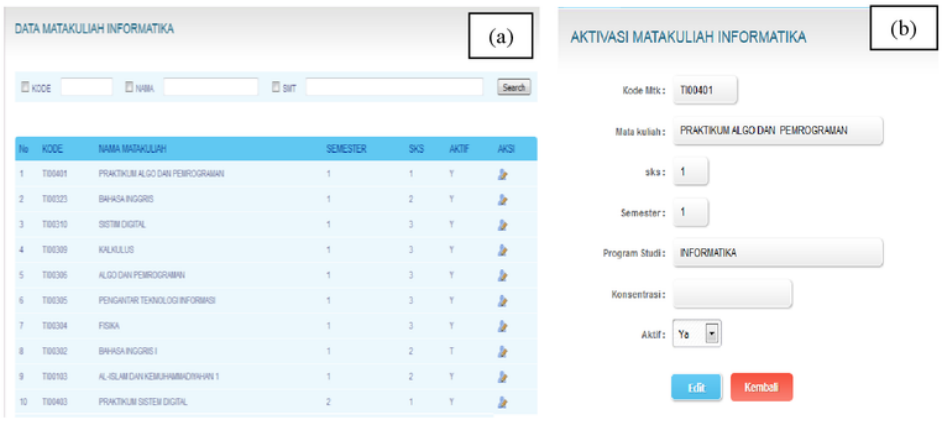

Figure 5. (a) Form List courses and (b) activated courses in the information system Faculty.

After faculty enable courses to use in the current academic year the supervisor will validate the data subjects that later can be used for scheduling courses, this is explained in Figure 6.

Figure 6. Form validation courses by expert supervisor.

4. Conclusion

The responsive web-based integrated information system proposed in this research can make the curriculum setting process, especially the activation of the course when the student will do the study plan card can be done more efficiently, without having to send data to expert supervisor. From the test results got the conclusion that the proposed system can also be a media search and management curriculum in universities, especially private colleges.

Pre-built systems only provide information for curriculum only institutions. While the proposed integrated system can provide information not only the curriculum management, but also the faculty as the executor and the head of the university can also monitor and evaluate the current curriculum whether in accordance with government regulations and what guidebook does not. To make it easier to know the data of certain courses in show search feature so that the time needed to search certain course becomes shorter and efficient.

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