

DESIGN OF A WEB-BASED STUDENT ADMISSION INFORMATION SYSTEM AND ACADEMIC SYSTEM AT MADRASAH ALIYAH DARUSSALAMAH SAMPANG

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ABSTRACT

Technology and education are at their peak today, learners are no longer adaptable, but technology is part of the facilities that can help Madrasah in the teaching and learning process. The world is progressing faster than education due to the unequal and unpredictable levels of economic power and scientific development in different countries. Madrasah is one part of the largest educational institutions in Indonesia, the number of Madrasah institutions in Indonesia should be accompanied by the better quality of the quality of education. This research makes a Madrasah information system design that consists of three aspects, namely the new student admission system, the Madrasah academic information system and the main appearance of the Madrasah news WEB. This research explains the design flow that will be made through flowmap diagrams, use case diagrams, activity diagrams, class diagrams in describing the database and the main page display of the Madrasah news WEB. This research focuses on the system design part, namely the process of analysing the needs and development of the system using the waterfall method and not up to coding or implementation of system development. The result of this research is that education facilities are made easy and the academic system is better. The Madrasah news WEB is also an interesting trend because the Madrasah news WEB is an official media access owned by the Madrasah so that the public can find out about Madrasah activities through news about education and student achievement information.

Keywords: Information, Madrasah Aliyah, Design, System, WEB

I. INTRODUCTION

Information technology develops along with quality human resources, the development of quality human resources cannot be separated from the quality of education that continues to be built to encourage quality human resources [1].

The world of industrial work, entrepreneurship and education must have a balanced quality of development, because the mandate of education is to educate the next generation of the nation to continue to develop economic independence and community welfare [2].

In fact, education and the industrial world still do not have a balance, one of the phenomena that occurs today is the world of education, namely the teaching and learning process is not more advanced than the technology that has developed today, so that good supporting facilities are needed in Madrasah to encourage higher quality education [3]. Strengthening the knowledge and skills of teachers, strengthening teaching and learning facilities and responsibility and training for students who excel [4].

Digital media in Madrasah is also important to note, because Madrasah are the largest educational institutions in Indonesia. Madrasah have proven that their students are capable and have a great contribution to the nation and state in building the economy and progress of the nation and state [5].

Information systems and education have an important role, without the integration of systems and

quality education, teaching and learning will not run optimally, especially in today's digital era. Madrasah administration, Madrasah teaching and learning curriculum and information media such as Madrasah news. These three components greatly influence the Madrasah in producing a superior generation of candidates in the field of religious knowledge and economic development [6].

There are 2 types of Madrasah institutions based on the level of the unit that oversees them, the first type of Madrasah under the auspices of the ministry owned by the government and Madrasah that was founded by the private sector or foundations [7]. Not to mention the level of distribution of Madrasah in Indonesia is very diverse, some are in cities, districts, suburban villages and even some are in underdeveloped areas that are very far from the hustle and bustle of the city [8]. Of course, this fact is a mandate for science, especially academics who understand education and information technology to continue to contribute in order to help our brothers and sisters who are far away and left behind [9].

From some of these problems, this research is important to be implemented because it produces solutions to Madrasah related problems so that problems in Madrasah education can be resolved, at least it can help Madrasah in developing its digital education system to become more advanced [10].

II. RESEARCH METHODOLOGY

This research uses a research sample as a source of data obtained from Madrasah Aliyah Darussalamah which is located in Baruh Village, Sampang District, Sampang Regency, East Java Province, Indonesia. Researchers took a case study at the Madrasah because it can represent various types of Madrasah and locations that are still in the East Java region with a model of a region that is still developing.

The research was initiated through interviews with the head of the Madrasah with researchers, the board of teachers with researchers, some guardians of students with researchers and students with researchers. The data was obtained after going through the question and answer process and collecting some important problems

in the world of education. Some of these problems include the lack of interest of young people to study in the Madrasah, the absence of a WEB or supporting information system in the Madrasah. The Madrasah actually has many talented students who have the potential to have achievements if trained optimally.

This research uses the waterfall method approach in developing the santri information system in the Madrasah, considering that the system is the first step to be created and developed in stages. The method has the most appropriate type of completion because it relates to the development of information systems. So that the method is feasible to use as a method in developing information systems in Madrasah, as shown in Figure 1 below.

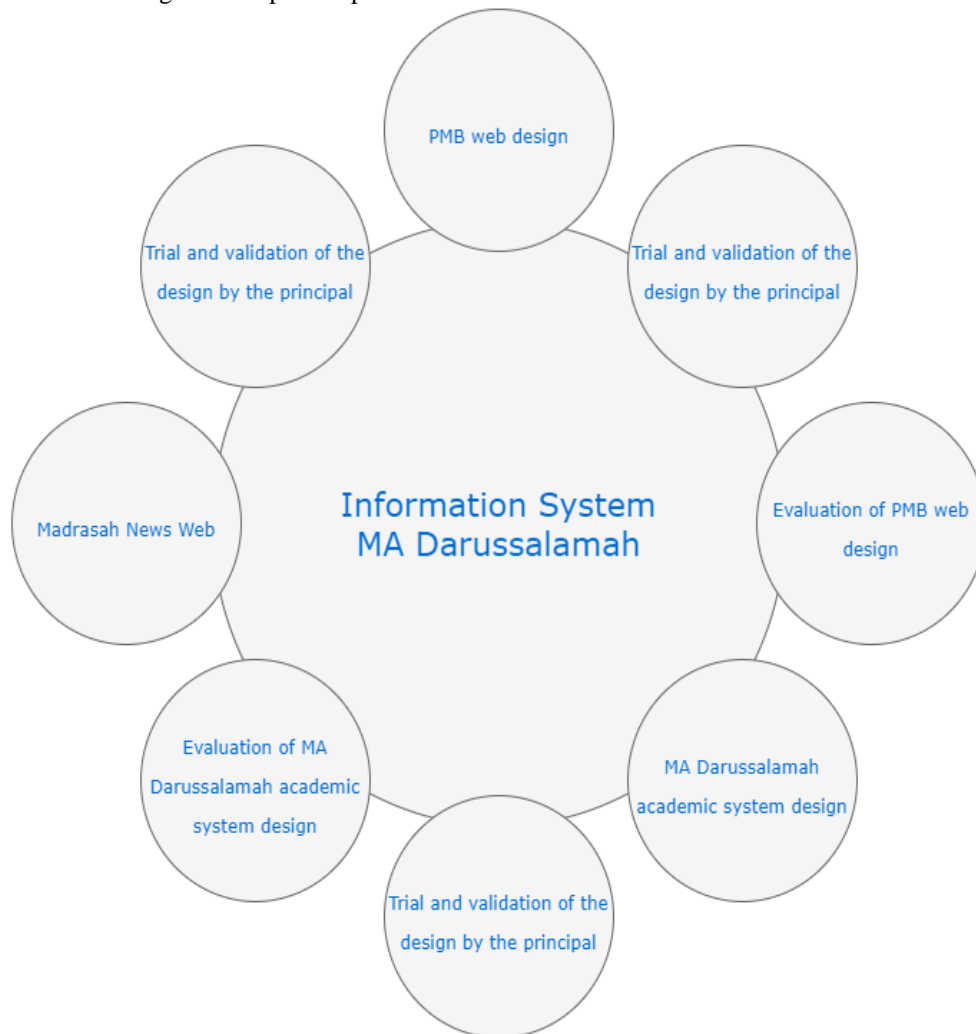


Figure 1: Overview of the research design flow

The problem boundaries and scope in this research are in the process of making a new student admission WEB design, academic information system design and Madrasah news WEB design. This research focuses on the system design of the WEB to be created and does not reach the implementation of making WEB applications, this design is designed using PHP and MYSQL WEB programming. This research explains the flow of system design in the research, flowmap diagram, usecase diagram, activity diagram, class diagram in describing

the database and the main page display of Madrasah news WEB.

III. RESULTS AND DISCUSSION

Flowmap of Information System Framework

In this research there are 3 accesses in designing the santri information system, the first access is to register in the Madrasah, the second aspect is the IPNU IPPNU organisation and the student council can access the

Madrasah WEB to write various kinds of Madrasah activities including training students to get to know information technology.

In addition to using the waterfall method, the author uses needs analysis in analysing the design of a WEB-based student information system. The system is still in the same building belonging to the Madrasah institution as shown in Figure 2 below.

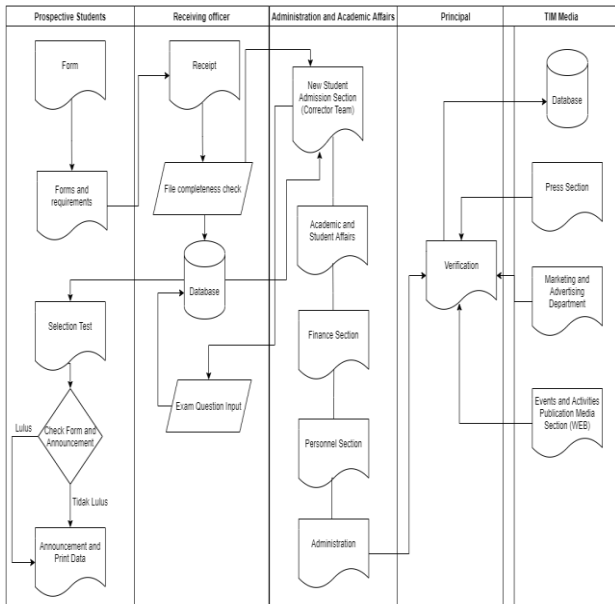


Figure 2. Design framework of WEB-based Madrasah system information system

New Santri Admission WEB Flow Design

There are two stages in the selection process, the first stage is administrative selection, administrative selection includes completeness of diploma files, skhun, identity cards and santri family cards.

The next stage of selection is the academic potential exam, of course the exam questions have been prepared by teachers in the Madrasah which consists of several questions from a combination of various subjects. The end result is that the appearance of the santri exam scores can be solved into two categories, namely pass and fail. The value will also be a reference to the board of teachers regarding the limits of the ability of students to subjects that are not yet known.

The design of the new santri admission WEB flow starts from creating a system flow which will be shown in Figure 3 below.

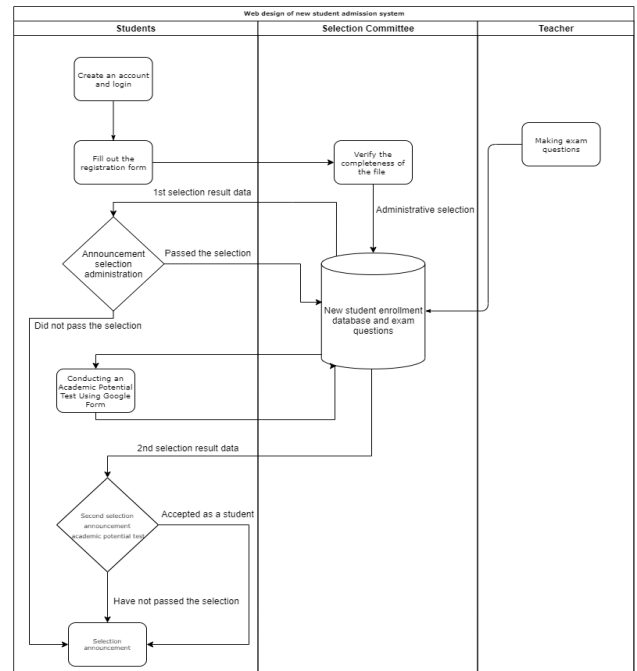
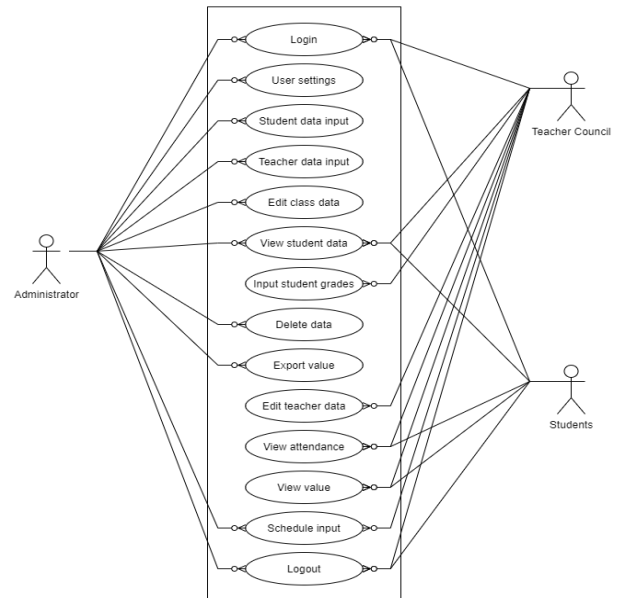


Figure 3. Design of new student admission web flow

Madrasah Academic System Design

In the design of Madrasah academic system, considering the main needs of Madrasah is the main function of academic activities as a whole, we designed menu access in three main actors as described in Figure 4 below.



Gambar 4. Usecase sistem akademik Madrasah

In the activity itself, this research describes it using an activity diagram, the administrator logs in to the website application system with a username and password after the admin login, then proceeds to the dashboard home page, the admin can manage all academic information data, including the registration system section, academic system and Madrasah news.

The teacher section logs in using a username and password and enters the teacher dashboard menu which can (input, edit, delete grades, input learning materials).

The santri section logs in using a username and password then enters the application system which can see the results of (learning progress, biodata, santri

grades, attendance, lesson material and announcement information inputted by the teacher as well as a report on learning outcomes or report cards. As shown in Figure 5 below.

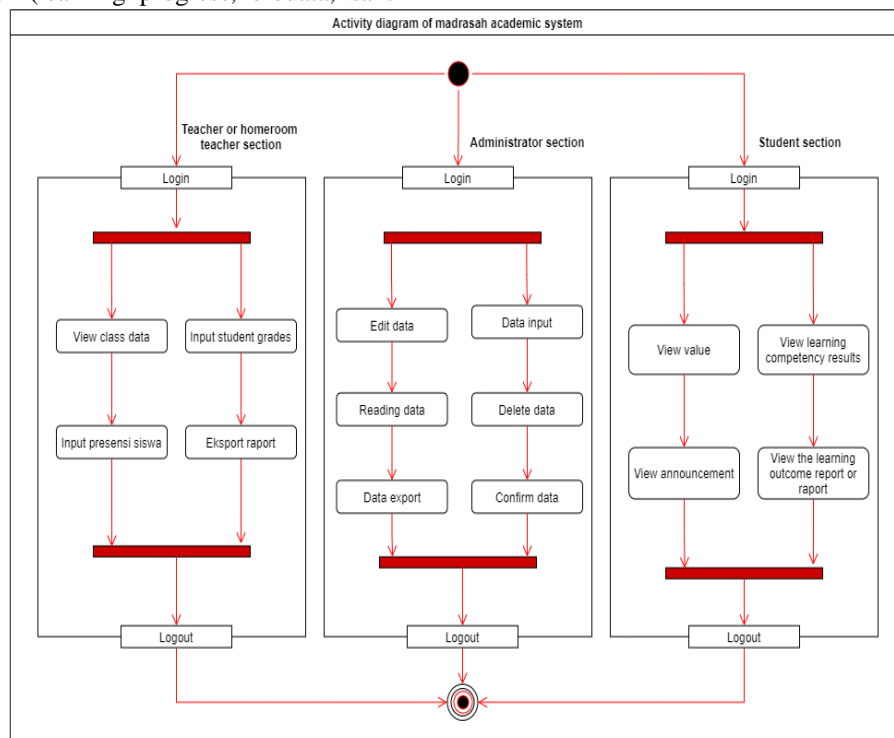


Figure 5. Three-actor activity diagram

Madrasah Information System Database Design

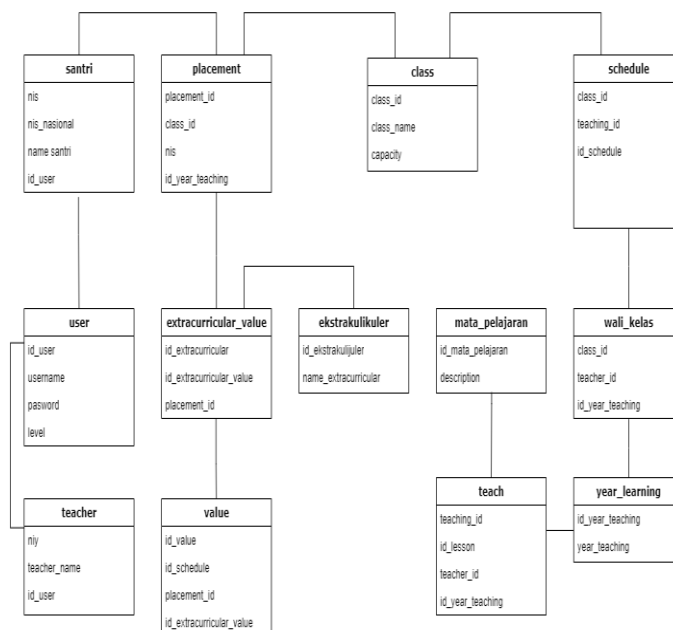


Figure 6. Madrasah information system database class diagram design

As shown in Figure 6 above. Database design on the madrasah aliyah academic information system, class diagram illustrates how the database between tables can be connected to each other, this research uses the

principle of conceptualising data logical models that connect between tables with relationships.

Madrasah News Interface System Design

In this section, the author made a simple display scheme of Madrasah news WEB, following the display of the main page of Madrasah information and news WEB as shown in Figure 7. below.

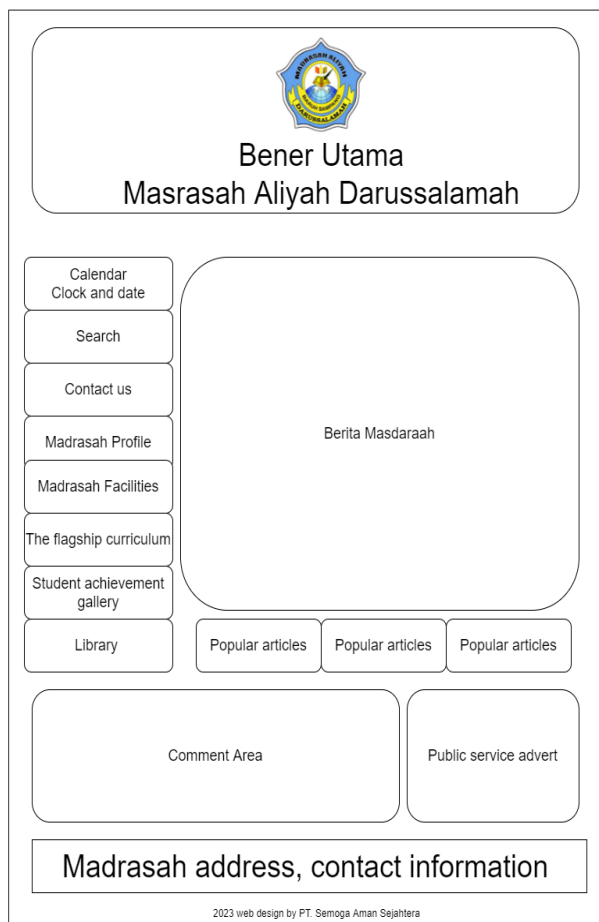


Figure 6. Main page screen display structure

Evaluation Results

The validation that we did in the design of the Madrasah aliyah information system, we gave a questionnaire with google drive, the results of the questionnaire that had been given showed that the head of the institution agreed on the results of the design that had been made, as shown in table 1 below.

Table 1. Evaluation results with questionnaires

List of draft results	List of draft results
The design of the new student admission WEB is pppropriate	The design of the new student admission WEB is appropriate
Madrasah academic information system design is suitable	Madrasah academic information system design is suitable
Madrasah news WEB design is suitable	Madrasah news WEB design is suitable

IV. CONCLUSIONS AND SUGGESTIONS

Summary

This research focuses on the design of the Madrasah aliyah academic system by adding the design of the academic information system and Madrasah WEB.

From the system design that we made, it can provide a reference to other Madrasah in building a simple and effective developing Madrasah information system to be implemented in a new system or development of an existing system.

This research produces a simple Madrasah information system with maximum functionality because in addition to using the waterfall method in developing the system, but the design we made is also based on the needs that exist in the Madrasah.

Advice

In future research, we hope that the design can be embedded with special methods, for example the SAW or AHP method, these methods can provide advice in ranking the selection process for new santri admissions.

In the Madrasah academic system menu, other methods can also be inserted, for example an intelligent system that can help evaluate the work system of the teachers such as the best teacher assessment, attendance attendance or curriculum system and report card score input.

In the school news WEB section, further research is expected to implement the information system design that has been made. In addition, an attractive WEB design will provide added value to readers to see various kinds of school activities including the development of student achievement.

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