Development of Information Management Information System for Learning Implementation Plan (RPP) for Senior High Schools (SMA)

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ABSTRACT

Preparation of Learning Implementation Plan (RPP) in senior high schools is generally done using Microsoft Word and archived in a way in print (hardcopy). With the process of accessing the RPP was less effective. RPP data access is required for the Kelas in Learning and Teaching (KBM) and for the renewal of the RPP, and it is made at the beginning of each new school year. This can be overcome with the help of systems and information technology. A web-based information system can be used to process data RPP, storing / archiving the data centrally so that effective and efficient RPP accessing and archiving.

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1. Introduction

According to the Ministerial Regulation No.41 / 2007 on the Standard Process: Planning the learning process includes the syllabus and lesson plan (RPP), which contains the identity of the subjects, the standard of competence (SK), basic competence (KD), indicators of achievement of competencies, learning objectives, teaching materials, allocation of time, learning methods, learning activities, assessment of learning outcomes, and learning resources. RPP is derived from the syllabus for directing the activities of learners in an effort to reach KD. Every teacher in the educational unit is obliged to draw up a complete lesson plan and systematically.

Assessment of learning outcomes in the RPP, in addition to containing assessment methods and standards are also equipped with the problems the plan will be provided in accordance with the achievements of KD. The preparation of these matters quite time-consuming for the teachers. The existence of a question bank will be very helpful for teachers to arrange matters. When teachers get new issues could directly save the bank about not waiting time of drawing / renewal RPP. Problems of the previous academic years can be combined with questions about the new so add variety.

Formulation / Updates RPP dilakuan the beginning of each new school year. Updates are intended to adjust to the schedule of the class meeting, the development of the students, the development of technology or method of learning, the reform issues. Subject teachers prepare lesson plans using Microsoft Word, then printed, in volume and handed over to Vice Principal of the curriculum to be checked and archived. Need a place large enough to accommodate the archives RPP year after year. The archives of this RPP is required when the subject teacher is absent, then the substitute teacher or gurubaru can proceed according to plan lessons and with the same standard. Besides the archives RPP is also required when going to prepare / update the RPP, as a reference. RPP archive search archived manually quite time-consuming.

Based on the problems described above, it is necessary to RPP management information system which can make the preparation and filing of RPP more efficient as well as easy access to archives RPP. The information system will be built can be implemented in schools at the high school.
2. Theory

a. Development
   According KBBI, development is derived from the wake, which has the meaning of a process, a way, acts to build or set up. Within the scope of the information system, the process of building and implementing up to the realization of an information system (Suharto, 2002: 2).

b. Information Systems
   The information system is a system that can be defined by collecting, memperoses, maintain, analyze and disseminate information for specific purposes. Unlike other systems, a system consisting of input information (data, instructions) and output (reports, calculations) (Sutarman, 2012: 13).

c. Data management
   According KBBI manage meaningful control, manage, run. Management is a process, method, action to manage. Can be summed data management is the process of regulation or control of a data

d. Learning Implementation Plan (RPP)
   According Permendikbud No. 65 of 2013 on the Standard Process, Learning Implementation Plan (RPP) is a plan-face learning activities for one or more meetings. RPP developed from the syllabus to guide the learning activities of students in an effort to achieve basic competency.

3. Methodology

3.1. process Model
   The model used is an evolutionary process, by applying the prototyping paradigm. Here are the stages in the process models:

   a) Communication (Communication)
      Communication in this case is to meet with customers to discuss their needs and what features you want to include in the software that will be created.

   b) Quick Plan (Planning)
      Planning here describes the results of discussions with the customer to all members of the development team. So that all team members have the same picture of the software to be created.

   c) Quick Modeling Design (Design Modeling)
      This stage is to make the software interface. Interface to be made must prioritize the ease and convenience of the customer.

   d) Construction of Prototype (Implementation in prototype form)
      Implementation is the stage to make the software itself. So programmers will create a software with codes that are required to form a new feature in the software.

   e) Deployment Delivery & Feedback (Testing, Delivery To Customers & Feedback)
      Testing will be conducted to test the software that has been created by programmers, whether it is run in accordance with the wishes or not and whether the interface is made easy to understand or not. After the qualifying stages of testing software, then the software will be handed over to the customer.

   ![Evolutionary Process Model](image-url)

   **Fig 1. Evolutionary Process Model (Presmann and Maxim, 2015, 46).**
3.2. Sisitem Development Model

Model / system development approach that is used is the object-oriented approach. This approach viewed the system as a collection of objects that interact with real-world objects. The depiction of the results of the analysis using the modeling language Unified Model Language (UML). UML is a modeling language that became standard in the delineation, documentation, and design of an object-oriented system. UML Diagrams used in this research that Use Case Diagrams, Class Diagram, Sequence Diagram, and Activity Diagram.

4. Discussion

4.1. Functional Needs Analysis System

Analysis of functional requirements formulated systems by analyzing the current state of how CSPs are prepared, archived and accessed. Identification of problems is done using PIECES method is to formulate weaknesses in the system / problem from the standpoint of Performance, Information, Economy, Control, efficiency and service. Functional Needs Analysis system is based on the problems that are formulated as follows:

a. A system that can manage data along semester of the school year.
b. The system handles the process view, add and change curriculum
c. The system handles the process view, add and modify the syllabus
d. The system handles the process add, change and delete the teacher data
e. The system handles the process add, change and delete data pengampu
f. The system handles the process add, change and delete data subjects
g. The system handles the process view, add, change and delete data RPP
h. The system handles the process view, add, change and delete data about the bank
i. The system can perform the search process using the keyword RPP subjects
j. The system can perform the search process question bank using keywords subjects
k. The system can provide a status report preparation of RPP and give notification to the teacher and vice principal subjects of the curriculum.

4.2. System design

The results of the analysis of the functional needs of the system is described using the usecase diagram as follows:

Usecase diagram describing the actor who plays a role in the management information system access lesson plans, and functional can be done by the system. Meanwhile, how the system functional relationship with the actor described using activity diagram. How a usecase / functional
system is done, is described with sequence diagrams. Here is a class diagram illustrating the structure of the class system and the relationship between classes.

![Class Diagram](image)

**Fig 3. Class Diagram**

Design database is described as follows:

![Database Diagram](image)

**Fig 4. Design Database**

4.3. **Implementation of the System**

a) **LoginInterface**

*interface* to get into the app permissions. Users input the appropriate username and password to gain access rights.

![Login Interface](image)

**Fig 5. Login Interface**

b) **RPP ManagementInterface**

*interface* to manage the RPP with functions such as add, modify, delete and view the RPP.

c) **Question Bank Management Interface**
interface to manage the Bank Problem with functions such as add, modify, delete and view the Question Bank.

![Question Bank Management Interface](image1)

**Fig 6. Question Bank Management Interface**

d) curriculum Management Interface

interface to manage the curriculum with functions such as add, modify, delete and view the curriculum.

![Curriculum Management Interface](image2)

**Fig 7. Curriculum Management Interface**

e) syllabus Management Interface

interface to manage the syllabus with functions such as add, modify, delete and view the syllabus.

![Syllabus Management Interface](image3)

**Fig 8. Syllabus Management Interface**

f) teachers Management Interface

interface to manage a list of teachers who can access the application with functions such as add, modify, delete and view a list of Teachers.
Fig 9. Master Management Interface

g) Subjects Management Interface

*interface* to manage Subjects with functions such as add, modify, delete and view the Subject.

Fig 10. Mata Lesson Management Interface

h) pengampu Management Interface

*interface* to manage the list pengampu to manage the RPP and the Bank Problems with functions such as add, modify, delete and view the list of pengampu.

Fig 10. Management Interface pengampu

4.4. Testing the system

Tests performed on a functional system using a series of input methods dengan memberikan blacbox valid and invalid, if the system output as expected it functional system is running well. The results of the functional tests performed all goes well.

5. Conclusion

With the construction of information systems data management RPP RPP memudahkan teachers write lesson plans for supporting data such as curriculum, syllabus and Question Bank is managed in a centralized system. RPP data archiving more efficient because archived digitally. In addition to the features of RPP facilitate the submission confirmation vice principal of curriculum
for teachers to control pengampu already collecting RPP or not. With the construction of the data management information system RPP in which the system is built Web-based information contained user management will allow teachers who have access rights to access the data RPP.

6. Reference


