Information System of Elementary School Administration

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Abstract

The aim of educational administration is to support the achievement of all the implementation’s purposes at an educational institution. The achievement of these purposes can be measured, express or implied from the administrative reports that have been made by teachers and can be controlled by the principals. The accuracy of administrative report is needed so that all the activity purposes that occur in the school environment can be clearly defined. However, the limitations and the inability of teachers to produce accurate reports can be an obstacle of this case. The Information System of Elementary School Administration can be used to create reports in the field of administration within the scope of elementary school. The aim of information system is to facilitate the making of administration report to be more accurate, faster, and more consistent. This information system is a web-based oriented, so as to use would be more easily understood by user.

Keywords: administration reports;information system;web

1. Introduction

Educational administration aims to support the achievement of all objectives of the activities carried out in an educational institution. Achievement of these objectives can be measured, express or implied from the administrative reports produced by those who play a major role in the institution. In the neighborhood elementary school, people who have a major role is the teachers and principals.

Teachers make the administrative report which will then be given to the principal as a reference in assessing current conditions at the school. High accuracy in making administration report is needed so the principal is able to monitor the development of the school. But the difficulty in compiling data that will then be formed into an administrative report become barriers to teachers to generate accurate reports in accordance with a schedule to create a report that has been determined.

Information System of Elementary School Administration (SIFAD DASAR) present as a solution to solve the problems in the preparation of administrative reports. SIFAD DASAR built using web technology platform, which is already quite familiar among the users of information systems lately. Web technology is also quite simple to implement because of the resources needed are not too complex when compared with the implementation of information systems based on client-server desktop.

The main functionalities on SIFAD DASAR is to produce a report that is expected to help elementary school in Indonesia to present the administration report automatically according to the data stored in the database. SIFAD DASAR able to help present the administration report rapid, accurate, and consistent. Teachers can fill the report data manually using the template form provided, then the results of field data submitted to admin for input into the software, then the
system will issue a report according to the data that has been entered. Finally the report can be viewed and printed by the principal who acts as the operator. The resulting report will be presented in the form of tabulations and charts so that they can be a source of accurate information for decision-making.

2. Literature Review

Literature review section provides a summary of the theory or concept that refers to the list of libraries used. Summary of the theory to be presented in this paper are: information system, school/madrasah administration, and web based information system development tools.

2.1. Information System

The main components in building an information system is a data and information. Data is a representation of facts in the real world. Meanwhile, information is the result of the translation of data after a series of specific processes. Information system (IS) is a set of interrelated elements or components that collect (input), manipulate (process), store, and disseminate (output) data and information and provide a corrective reaction (feedback mechanism) to meet an objective.

**Figure 1. Input-Process-Output in Information System**

In information system, Input is the activity of gathering and capturing raw data. Processing can involve making calculations, comparing data and taking alternative actions, and storing data for future use. Processing data into useful information is critical in business settings. Output involves producing useful information, usually in the form of documents and reports. In some cases, output from one system can become input for another. [4]

Valuable information generated by the processing of data in an information system should have the following characteristics [4]:

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Table 1. Characteristics of Valuable Information

<table>
<thead>
<tr>
<th>Characteristics</th>
<th>Definitions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Accessible</td>
<td>Information should be easily accessible by authorized users so they can obtain it in the right format and at the right time to meet their needs.</td>
</tr>
<tr>
<td>Accurate</td>
<td>Accurate information is error free. In some cases, inaccurate information is generated because inaccurate data is fed into the transformation process. (This is commonly called garbage in, garbage out [GIGO].)</td>
</tr>
<tr>
<td>Complete</td>
<td>Complete information contains all the important facts. For example, an investment report that does not include all important costs is not complete.</td>
</tr>
<tr>
<td>Economical</td>
<td>Information should also be relatively economical to produce. Decision makers must always balance the value of information with the cost of producing it.</td>
</tr>
<tr>
<td>Flexible</td>
<td>Flexible information can be used for a variety of purposes. For example, information on how much inventory is on hand for a particular part can be used by a sales representative in closing a sale, by a production manager to determine whether more inventory is needed, and by a financial executive to determine the total value the company has invested in inventory.</td>
</tr>
<tr>
<td>Relevant</td>
<td>Relevant information is important to the decision maker. Information showing that lumber prices might drop might not be relevant to a computer chip manufacturer.</td>
</tr>
<tr>
<td>Reliable</td>
<td>Reliable information can be trusted by users. In many cases, the reliability of the information depends on the reliability of the data-collection method. In other instances, reliability depends on the source of the information. A rumor from an unknown source that oil prices might go up might not be reliable.</td>
</tr>
<tr>
<td>Secure</td>
<td>Information should be secure from access by unauthorized users.</td>
</tr>
<tr>
<td>Simple</td>
<td>Information should be simple, not overly complex. Sophisticated and detailed information might not be needed. In fact, too much information can cause information overload, whereby a decision maker has too much information and is unable to determine what is really important.</td>
</tr>
<tr>
<td>Timely</td>
<td>Timely information is delivered when it is needed. Knowing last week’s weather conditions will not help when trying to decide what coat to wear today.</td>
</tr>
<tr>
<td>Verifiable</td>
<td>Information should be verifiable. This means that you can check it to make sure it is correct, perhaps by checking many sources for the same information.</td>
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</table>
2.2. School/Madrasah Administration

The Government of the Republic of Indonesia through the Ministry of National Education Republic of Indonesia has set the standard for the administrative staff of the school / madrasah through Ministerial Regulation No. 24 of 2008. In these regulations, set competencies that must be owned by the administrators in the school / madrasah and applies nationwide. Standard administrative personnel school / madrasah include power head administration, executive affairs, and special services officer school / madrasah. To assist the head of the administrative staff, school / madrasah can arrange affairs executive, namely: Implementing Administrative Affairs Officer, Executive Affairs Finance Administration, the Executive Affairs Administration Infrastructures, Managing Administrative Affairs Relations with the Public Schools, Acting Administrative Affairs Mailing and archiving, Managing Student Affairs Administration, Curriculum Administration Executive Affairs, Acting Administrative Affairs Common to SD / MI / SDLB. In general, in the primary school, the head of the administrative personnel rests with the principal, while executing the affairs undertaken by the operator work load adapted to the conditions of the financial capacity of the school.

To qualify as an administrative personnel must meet the competencies required by the ministerial regulations. The required competencies grouped into personal competence, social competence, technical competence, and managerial competence. In particular, the technical competence that must be mastered by the administrative personnel is as follows [5]:

- carrying out personnel administration,
- financial administration implement,
- implement administrative infrastructure,
- carry out administrative relations with the public,
- the administration mailing and archiving,
- implementing student administration,
- curriculum administration,
- the administration of special services, and
- applying information and communication technology (ICT)

2.3. Web Based Information System Development Tools

a. XAMPP

XAMPP is an Open Source-based package developed by an Open Source community. XAMPP is needed to build a web-based information system which consists of a program of Apache HTTP Server, MySQL database, and language interpreter written in PHP and Perl programming languages. Apache is a web server used in this information system. Web server itself is designed to serve various types of data, including text, hypertext, images, sound, three-dimensional images, plug-ins, and more. MySQL is a database system to process the data base used in this information system. MySQL is already very commonly used for web-based information systems. Because it already exists in the XAMPP package, further facilitate its use in the manufacture of information systems. [1]

SIFAD DASAR development using XAMPP 1.7.0 which contains the Apache 2.0 web server, PHP interpreter version 5.2.9 and MySQL version 5.0.51a.
b. PHP

PHP was first developed in 1995 by Rasmus Lerdorf, but is now taken by the PHP Group. At his initial PHP stands for Personal Home Page, but in its development, converted into PHP: Hypertext Preprocessor, a recursive extension. PHP was released in the license PHP License, which is a little different with the license GNU General Public License (GPL) used for Open Source projects. However, the use of PHP still not charged (free). The ease and popularity of PHP has become a standard for web programmers worldwide. And according to wikipedia, PHP has been installed on more than 244 are also websites and web 2.1 servers to date. [2]

c. Code Igniter

Code Igniter is an information system in the form of an open source framework model MVC (Model, View, Controller) for building dynamic websites using PHP. Code Igniter allows developers to create web information systems quickly and easily than by making it from scratch. Code Igniter is an open source information system that is free for use by anyone without having to pay a license to use it. Code Igniter is also a framework for building an information system dynamic website using PHP that can be used to quickly and easily without having to build a PHP application from scratch. [2]

d. JQuery

JQuery is a Javascript library which is very compact and simple to manipulate components in the HTML document, regarding events, animations, effects and processing ajax interaction. JQuery is designed in such a way that makes the program uses javascript be relatively easy. [3]

3. Result and Discussion

3.1. Module Structure

The structure of the module on SIFAD DASAR describes the grouping functionality / features contained therein. As for the structure of the module is described in Fig 2 below:
Module "login" is used as an authentication user in using information systems. So not just anyone can use this information system. Only registered users are entitled to use this information system. Each user is also given the right of access varies according to their share. Users can access this information system is admin and operator. Admin can manage and viewed all the data and reports on information systems. Admin also has the right to determine who can access this information system. While an operator can only see the data of students and parents, teacher data, the data of curriculum, teaching and learning activities supporting data and the data of counseling.

Module "Siswa dan Orang Tua" is used to manage the data of students and parents. Student data is master data, where the data is a prerequisite that must be met before you can add transactions in accordance with activities related to the student. When users access the module "Students and Parents" and then select the submenu Data Students and Parents, it will display a page containing student data and parent reports. While the data plus button to add the data of students and parents / guardians can be accessed only by admin. Student data are displayed using pagination which will set the display data in 10 data per page.

Module "Pendukung KBM" is used to manage data related to teaching activities. One component of activities in addition to students is an educator (teacher). To process data related to teaching activities, provided three submenus, namely: data educators, classroom management, and counseling. Features data educators is used to add, change, or delete the teachers involved in teaching activities. Class management features are used to map the students and teachers into a particular class on one teaching period. Mapping is the first step that must be done before the teacher could report the activities of students in teaching and learning. Features counseling is used to record and print the results of the consultation carried out by the students to the teacher. This feature is built to help parents get feedback related to the personality of the student while in school or following the teaching and learning activities.

Modul “Kurikulum” built for the management of the curriculum used by the school. Through this module, the user is provided features relating to the management of subjects and target. Determination of the target for each subject will be the basis for calculating the achievement of teaching activities at the end of each semester. The calculation result will be a very valuable information for principals in developing programs related to teaching activities.

3.2. Administration Reports

The aim of information system is to facilitate the making of administration report to be more accurate, faster, and more consistent. Administrative reports produced by SIFAD DASAR are:

a. Students Mutation Book

Students mutation book is a report generated to describe the number of students each school year. Through students mutation book, reported the number of mutations can enter, which is the number of students applying to the school, as well as mutations out, which is the number of students who drop out of school.
b. Students Data by Birth Year
To generate a report births according to the age group of students, the system calculates the number of students who sex men and women according to age students as well as the overall number of students who have the same birth year. Students registered in this report are students belonging to the students active (not listed in the log book of outgoing students or already graduated).

![Table of Students Data by Birth Year]

**Figure 4. Students Data by Birth Year**

c. Parents Job Distribution
This report is produced based on the calculation of the amount of work the father at the time of entering the data of students and parents. Father's work further grouped into general categories known work.

![Table of Parents Job Distribution]

**Figure 5. Parents Job Description**
d. Absorbency Level of Learning
To illustrate the absorption ability of the student to a group of subjects of essential and non-essential in a given school year, a report is made in the form of a graph. The graph is based on data subjects and scores for each subject in accordance groups of subjects. Stem red on the graph is data odd semester and blue are the data of the even semester.

Figure 6. Absorbency Level of Learning on Essential Group of Subjects

e. The Achievement of Curriculum
Graph achievement of curriculum used to report the average score obtained by the students at every level in a given school year. Through these graphs, it is expected the teacher so the teacher can evaluate the results achieved by the students always exceed the minimum passing criteria that have been set for each subject.
Figure 7. Achievement of Curriculum

f. Effective Learning Hours

Effective learning hours report is a report prepared by the name of the teacher, the subjects taught by the teacher as well as the schedule of the day what the teachers teach. Admin can change, add and delete data effective learning hours.

<table>
<thead>
<tr>
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<th>Senin</th>
<th>Selasa</th>
<th>Rabu</th>
<th>Kamis</th>
<th>Jum'at</th>
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</tbody>
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Figure 8. Effective Learning Hours

4. Conclusion

SIFAD DASAR can be used by primary school operator that plays a role as executor of administrative affairs. Reports generated by SIFAD DASAR can be used by the school as head of the administrative personnel to follow up and improve programs designed to improve the quality of teaching. The resulting report is a translation of the technical requirements that must be met by school administrative, namely: the administration of student, school administration implement, as well as the application of information and communication technologies to support making administrative activity report. So that, overall, SIFAD DASAR capable of supporting 30% of technical competence that must be mastered by a school administrator.

As the importance of compliance with the school administration reports to improve the quality of teaching, the expected development of SIFAD DASAR to meet 70% other technical competence can be realized, so the use of information and communication technology will be able to accelerate the creation of administrative reports and the results of the calculations are accurate.
References