Multi User Decision Support System For Teachers Sertification With HTTSP

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Abstract ── Education quality is a key condition to realize the life of a developed nation, modern dan prosperous. (Fasli Jalal 2008) Teacher quality greatly affect the effectiveness of learning (Suherman, 2007, Rink, 2002). Teacher certification program is a way to improve the quality of teachers so that the quality of education will be increased dan in turn affect students' achievement (Siedentop & Tannehill, 2000).

The purpose of this paper is to discuss the design of decision support systems passing teacher certification so as to facilitate the certification team dan assessors in the decision making sertikasi teacher graduation. In this paper we use a qualitative method based on system development life cycle (SDLC), including planning, analysis, design, dan implementation.

Design of decision support systems passing teacher certification can provide information about passing the certification of teachers, as information analysis dan control in teacher certification assessment conducted by the assessor dan teacher certification of graduation information.

Keywords : Teachers Certification, System Development Life Cycle (SDLC), Qualitative Methods, Method of Black Box.

I. INTRODUCTION.

Quality education is a key condition to realize the life of a developed nation, modern dan prosperous. (Fasli Jalal 2008) Teacher quality greatly affect the effectiveness of learning (Suherman, 2007, Rink, 2002).

Teacher certification program is a way to improve the quality of teachers so that the quality of education has increased, and in turn affect students' achievement (Siedentop & Tannehill, 2000).

Implementation of teacher certification is a commitment of the government, in this case the Ministry of Education, to implement the mandate of Law Number 14 of 2005, which embody a quality and professional teachers. Given the many variables that influence it, from the system and mechanisms of certification, assessors, until the teachers themselves as the party to be assessed. Own portfolios as assessment models open the possibility of manipulation of the certification documents.

To overcome this problem, this paper discusses the design of decision support systems passing teacher certification using a qualitative method based on system development life cycle (SDLC). The result serves as a information analysis, control in teacher certification assessment conducted by the assessor and teacher certification of graduation information.

II. BASIC THEORY

A. Decision Support System

Understanding decision support systems that raised by Michael S Scott Morton and Peter GW Keen, in the book Management Information Systems (McLeod, 1998) states that the decision support system is a system aimed at producing information on a problem that must be made by the manager.

According to Moore and Chang (2008), SPK can be described as a system capable of supporting ad hoc data analysis, and decision modeling, decision-oriented, future-oriented planning, and is used at times unusual.

Stages of SPK (Moore and Chang, 2008):
1. definition of problem  
2. The collection of data or elements of relevant information  
3. processing data into information in the form of graphs and written reports  
4. determine the alternatives solutions (can be in percentage)

The purpose of the SPK: (Moore and Chang, 2008).

1. Help resolve the problem of semi-structured  
2. Supports managers in making decisions  
3. Improve the effectiveness rather than efficiency of decision making

The process, SPK can use help from other systems such as Artificial Intelligence, Expert Systems, Fuzzy Logic, AHP, mathematic, qualitative, quantitative, etc.
B. Qualitative Methods

According to Strauss and Corbin (2003) qualitative writings referred to as a type of writing that the findings are not obtained through statistical procedures or other forms of matter. Furthermore, chosen because of steadiness qualitative researcher writing based on experience writing and qualitative methods can provide more details about the complex phenomena that are difficult revealed by quantitative methods.

C. System Development Life Cycle (SDLC)

SDLC (Systems Development Life Cycle) is an evolutionary process that is followed in implementing the systems and subsystems of computer-based information (Mcleod 2001). SDLC consists of a series of tasks that follow closely the steps a systems approach. SDLC consists of five stages. The first four phases are planning, analysis, design and implementation (implementation). The fifth stage is the stage of its use. SDLC is the implementation of a systems approach to the task of developing and using computer-based systems.

The method itself is an SDLC methodology, but the pattern is more influenced by the need to develop a faster system (McLeod 2001).

D. Method Of Black Box

Black box testing focuses on the functional peresaratan software (Roger S. Pressman. Ph.D). Thus, black box testing software allows engineers to get a set of input conditions that fully utilizes all the functional requirements for a program. Black box testing is not an alternative to white box techniques, but it is a complementary approach that is most likely able to uncover the error class than the white box method. Black box testing trying to find errors in the following categories:

1. Functions that are not correct or missing.
2. Interface errors.
3. Errors in data structures or external database access.
5. Initialization and termination errors.

E. Web Security

HTTPS is the secure version of HTTP, the communication protocol of the World Wide Web. Discovered the World Wide Web by Netscape Communications Corporation to provide authentication and communication tersdani and use in electrical komersi.

HTTPS approach is very simple, the client makes a connection to the server, to negotiate an SSL connection, then sends it via HTTP SSL applications.

Security level depends on the accuracy in implementing the web browser and server software and supported by the actual algorithm penyedangan. Therefore, on a web page to use HTTPS and the URL used starts with 'https://' instead of 'http://'

F. Implementation Of The Teacher Certification Process

The birth of Law Teachers and Lecturers in 2005 is a policy to improve the quality and competency of teachers through teacher must have qualified Strata I (S1) or Diploma 4 (D4), and has a professional certification. Based on ownership sertifikasi profession, teachers are entitled to allowance of 1 (one) month basic salary.

In accordance with Government Regulation Number 74 Year 2008 concerning Article 65 of the Master's letter b and Peranturan Minister of National Education No. 10 of 2009 on Setifikasi Teacher In Position, Setifikasi for Teachers in Position to obtain certification of educators conducted through a pattern:

1. Competency Test in the form of Portfolio Assessment.
2. Educator certification directly.

Accordingly, the following ten components of portfolio assessment:

1. Academic qualifications.
2. Education and training.
3. Teaching experience.
4. Planning and implementation of learning.
5. Assessment of superiors and supervisors.
6. Academic achievement.
7. The work of professional development.
8. Participation in scientific forums.
9. Experience in the field of educational and social organization.
10. Awards that are relevant to the field of education.

III. RESULTS AND DISCUSSION

This paper uses qualitative methods, and implement the development stages of the SDLC.

A. Planning

At this stage the researchers do opservasi to school which is the object of writing. In addition researchers conducted interviews with sources organizer sertifikasi vocational teacher in Gorontalo. To complement the data obtained, the authors undertook a literature study.
B. User Needs Analysis

A data collection process and problems of user needs in an information system. Analysis of user requirements as follows:

<table>
<thead>
<tr>
<th>No</th>
<th>Needs</th>
<th>Application</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Login</td>
<td>SPK graduation teacher certification Log of teacher (user), operator certification, managers, assessors, admin</td>
</tr>
<tr>
<td>2</td>
<td>Entering data</td>
<td>Form data entry a certified teacher identity, income assessor's name, certification assessment.</td>
</tr>
<tr>
<td>3</td>
<td>Calculation of Data</td>
<td>Processing teacher certification data values are automatically performed by the system</td>
</tr>
<tr>
<td>4</td>
<td>Information provided</td>
<td>Information is passed or not the teachers who participated certification. Notification to the leadership of teacher certification teacher certification in rayon organizers about the number of teachers who graduated and did not pass the certification.</td>
</tr>
</tbody>
</table>

Context diagram

General description of teacher certification.

![Diagram Context SPK Teacher Certification](image)

C. Implementation And System Testing

1). Testing System

After all programs are created, performed system testing using black box methods on a small scale by entering the participant teacher certification data that has been in the can SMK 3 Gorontalo participant data in the form of certification.

![Input Values From the Assessor](image)

Figure 2 giving out information input value is only done by the assessors.

![Display the Individual Values That Are Accessed By The Admin And Leadership Certification](image)

Figure 3 giving out information about the components assessed in the certification, also demonstrated the difference in value between assessors.

![Display the Individual Values That Are Accessed By The Teacher](image)

Figure 4 giving out information outcome assessment teacher certification. Exemplified above that participants have graduated with no 07300202700003 (L) tingka vocational teacher certification. Evidence recap the results of such value that will be brought to
LPTK parent / organizer (Gorontalo State University) to take a certification certificate.

If participants get to meet certification requirements (MP), the participant is declared passed, because its value has exceeded the set limit of 850 points.

If a participant certification to get the revised value (RV), the peseta was worth having to wait longer because the value is there is a very striking difference from the provisions that have been determined from the rule book alloys teacher certification (book 2 guide the technical implementation of teacher certification). Difference in value (RV) will be processed / reviewed by two assessors member value, it is likely the final result value can be passed or follow PLPG (latian the implementation of education and the teaching profession).

If a participant sertifiksi get the complete data or disqualification (MD), if the data menlengkapi the participants must follow PLPG whereas if the disqualification is not able to follow the certification process due to reasons that have been determined by the technical implementation guide book 2 teacher certification.

FIGURE 5 REPORTS THE VALUE

Figure 5 reports the value of giving out information accessed by the admin and leadership certification. Page views this value reports no difference between admin and management certification.

D. Aspects Of Decision Support System

This information system was tested with the installation of the system performed at the Operator Certification Rayon University Teachers, in this case conducted at the State University of Gorontalo.

Implementation of decision support systems:
1. Help resolve the problem of semi-structured in terms of teacher certification assessment conducted by the assessor.
2. Supporting the leadership in making decisions in terms of determining the loan assessors and assessors of rayon organizers to assess certification.
3. Improve the effectiveness rather than efficiency of decision making

Work process program is as follows.
- Admin.
  Admin reserves the right to mengelolan data management (data teacher, assessor data, certification data). To enter this system admin using the password papers.
- Operator
  The operator is only entitled to enter and edit data to teachers. To enter this system the operator uses the operator's name and password papers.
- Assessors
Assessors are only eligible to enter the teacher certification participants. To enter this system assessors to use the name of the parent number of assessors and assessors password with no parent.

- Head of certification
Head teacher certification are entitled to see the value of the participants, the difference, the value of the input values and assessors recap. Where the difference in value of certification can be seen when the participants entered in the menu.

- Teachers
User teachers are participants in this certification. Where teachers are entitled to see the results of certification.

E. Operation And Maintenance
Operation performed by the operator and administrator certification team. The operator in charge of teacher input data are: the name of the teacher, and a number of identity-related teacher certification. Assessors in charge include the value of teacher certification. Administrator charge of data processing teacher certification.

System maintenance (maintenance) is done once every 4 months, so the system can run with best performance.

IV. CONCLUSION
Design of decision support systems provide certification of graduation graduation information about teacher certification, as a information analysis, control in teacher certification assessment conducted by the assessor and teacher certification of graduation information. This application still needs to be tested (at least two teacher certification period), so it can be known benefits for the management of teacher certification.

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