Teaching Campus Optimization Using ICT as A Social Education Movement Building Education in Undeveloped Villages

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ABSTRACT

SD PAB 25 in supporting an effective 2013 curriculum, the process of academic activity in which the subject teacher gives a recap of scores to each homeroom teacher to be inputted back in the final grade as a report card, the length of time to search for data in the process, besides that the student assessment processing system is still manual. Thus, the manual process by recording it in the book can cause damage or loss of data that will later be needed when making the report card. Therefore, this research was conducted in order to answer these needs in schools in underdeveloped villages. We use the system development cycle as the research method. The design of input, output, menus, and database displays uses Sublime Text and the Javascript programming language, using the Mongo DB Database Management System. The resulting output is in the form of report cards. The results of the study showed that the PSB model can facilitate students and teachers at school. Moreover, it is very important to be implemented in schools.

Keywords: Curriculum, Erapor, Values, Web
INTRODUCTION

Indonesia requires the right efforts to overcome various problems, including the problem of education in underdeveloped villages, with a large and heterogeneous area, geographically and socioculturally (Dudung et al., 2018). School is an organizational facility that provides services to the community in the field of education. Each school will have hundreds of students, and each student certainly has different grades. Therefore, each school should have a system that can process student grade data quickly so that it does not take a relatively long time to process value data (Ali, 2018). One of the problems in underdeveloped villages related to education is inadequate infrastructure (Idrus, 2012). Facilities and infrastructure are important in supporting the smoothness or ease of the learning process (Hanifah, Irna, Haibati, Puji, & Ayuning, 2020).

Infrastructure in underdeveloped villages is very apprehensive. Whereas facilities and infrastructure are important in supporting the smoothness or ease of the learning process (Murniati, Purwaningsih, & Buwono, 2016). Learning media is one of the many types of educational facilities used by schools. The use of technology in teaching is the right thing to do, considering that education in Indonesia must be able to adapt to technological advances, especially amid the outbreak of the COVID-19 virus. The use of technology in teaching will encourage teachers to create a technology-based learning process (Ahmad, 2013). The problem of education is a very complex problem if it is not handled properly (Farida, Tippe, & Tunas, 2020).

The pandemic conditions make students limited in their learning. Circumstances that do not allow learning from home cause each class to take turns every three days. This is the main reason why the research team conducted this research activity on SDS PAB (Sekolah Dasar Persatuan Amal Bakti) 25. SDS PAB 25 is also one of the schools that received the first batch of the 2021 Teaching Campus Program. The teaching campus activity is a program of the Ministry of Education and Culture in collaboration with the Education Fund Management Agency (LPDP). Through this program, students are given the opportunity to develop themselves and contribute directly to the field of education in Indonesia. The Teaching Campus Program is a teaching and learning program that presents students as teachers and teacher collaboration partners. The Teaching Campus Program is focused on elementary school (SD) level education in 3T (remote, disadvantaged, and outermost) areas. The Minister of Education and Culture also emphasized that universities and lecturers should support their student's participation in the Independent Campus program and facilitate the conversion of credits because the Independent Campus is a student's right to study outside the campus.

Sekolah Dasar Persatuan Amal Bakti (SD PAB 25) Medan delivers material daily; one material is finished, daily tests are carried out, or when one subject is finished. Every three months after several topics are delivered, namely in the middle of the semester the subject teacher holds a midterm exam for students at school. Furthermore, further learning is carried out in order to convey the subject matter in one semester, and an end-of-semester evaluation is carried out which is also called a semester exam.

The results of the midterm exam are recapitulated with the final grades of the semester. The teacher for each subject collects the final grades for each student in the form of a written report, then the teacher for each subject submits these scores to the class advisor teacher. The class advisor's role is to collect values from all fields of study to be transferred to the report card. The problems encountered are: loss of data causes repeated recording of values, and the value processing process which is still done manually, slows down the value calculation process because it takes longer to do it. The benefits of the web can help administration, homeroom teachers, and subject teachers in processing student learning outcomes effectively and efficiently (Astini, 2020).
Therefore, the processed data can be stored neatly and can reduce errors in calculating student scores in the form of report cards.

**LITERATURE REVIEW**

**ICT (Information and Communication Technology)**

ICT includes all types of information and communication technologies, such as audio, radio, video, television, telephone, computers, and the internet. ICT also includes software in addition to the hardware. So what is meant by ICT utilization for education is the use or utilization of one, several, or a combination of the various types of ICT to support the educational process. The use of ICT for education is one application of the concept of educational technology. ICT has enormous potential for improving the quality of education (Ladjamudin, 2013). There are three stages to the modified ICT-based development model procedure: the identification stage, the development stage, and the deployment stage.

**PSB (Learning Resource Centers)**

The utilization of ICT for education in underdeveloped villages is an effort to support the improvement of the quality of the learning process in schools. These efforts can be realized in the form of ICT-based learning resource centers (PSBs) in schools. In general, PSB is defined as a learning resource service unit in schools or other educational institutions. In fact, PSB is a concept developed for the library. Suppose the library has been known as a unit that provides services for books and other printed materials. In that case, PSB adds to its services by providing services for electronic learning materials, both hardware and software. Koesnandar (2013) adds that the PSB model design needs to pay attention to its function, infrastructure, content, human resources, management and assistance, monitoring, and evaluation. PSB has the function of learning resource services, training, and innovative learning development. These three functions are the main focus of ICT utilization for education in the 3T areas. Thus, infrastructure is the basic facility structure for building technology. A complete infrastructure is required to create a system. One of the advantages of an ICT-based PSB is that even though it has thousands of content titles, it does not require a large amount of space. Moreover, the digital content provided as PSB's initial capital is packaged on a hard disk with a capacity of one terabyte. Therefore, human resources (HR) are the most important component in this program because PSB needs to be managed by competent HR and aims to improve the competence of the HR itself. HR consists of students, teachers, and school principals. Among the teachers, one was appointed to be the manager of the PSB. Based on the principles of empowerment (empowerment), buttoning up (growing from below), and sustainability (sustainability), Therefore, the management of PSB is completely left to the school. The management structure follows the existing school management system, which is entirely under the control of the principal. The companion is tasked with routinely providing guidance and overcoming problems encountered in the field. Monitoring and review are intended as means of controlling the success of this program. Monitoring and review have been carried out since the beginning of this program. Monitoring is done on a regular basis, both remotely and during visits. With regular monitoring, it is hoped that any obstacles or problems found in the field can be resolved immediately.

**RESEARCH METHOD**

This paper applies the Systems Development Life Cycle system development methodology and has been given the following limitations:

1. Identify Problems, Opportunities, and Goals
   a. Identification of problems in system development that the availability of ICT tools is inadequate and the infrastructure is still lacking.
b. After obtaining the problem formulation, it is seen that there are opportunities in the utilization of ICT to support improving the quality of the learning process in schools.

c. After knowing the opportunities and identifying the problems, the goal is to determine how the learning resource center has functioned as a learning resource service, training and can develop innovative learning.

2. Determine the Information Requirements
   To determine requirements and information, data collection was carried out by sampling student data, grade data, subject data, teacher data, homeroom data, and conducting interviews with school principals, as well as conducting observations by collecting documents related to the final project.

3. Analyze System Requirements
   The authors use Data Flow Diagrams (DFD) to analyze inputs and outputs to analyze functional requirements. Then a good technology and programming language to use. For example, we use Java, Javascript, PHP, Nodejs, and MongoDB as database software. This application will make data processing can be processed quickly and accurately, and duplication is avoided.

4. Recommended System Design
   At this stage, the input, output, menu, and database display designs from the results of the analysis are converted into a model or prototype so that the recommended designs, including interface, layout, and database design can function properly.

5. Develop and Document The System
   At this stage, pay attention to the use of fonts, colors, and functions of each menu and submenu to function properly.

6. Test and Maintain The System
   At this stage, PSB will be tested before being used. Thus, including testing every menu, database, and connection to the web server.

7. Implement and Evaluate The System
   This stage is carried out by buying a domain and doing web hosting so that the PSB web that is built can be used through devices connected to the Internet.

Processing of Assessment Results
1. Value of Spiritual Attitudes and Social Attitudes
   There are some steps that need to be done in order to make an attitude assessment recapitulation for one semester. The first one is for the teacher to classify (mark) journal entries into spiritual attitudes and social attitudes. Furthermore, the homeroom teacher formulates a brief description of spiritual attitudes and social attitudes according to journal entries for each student written in positive sentences. The description mentions very good and/or good attitudes/behavior and needs guidance. Last, the homeroom teacher collects a brief description (recap) of attitudes. By paying attention to the brief description of spiritual and social attitudes, the homeroom teacher concludes (formulates a description) the achievements of the spiritual and social attitudes of each student.

2. Knowledge Value
   Assessment is carried out through assignments, daily tests (UH), midterm exams (UTS), and final semester exams (UAS). Processing can be done for each basic competency value (KD) in each form of assessment by including UTS and UAS or by separating UTS and UAS.

3. Assess Skills
   Skill scores are obtained from the results of performance appraisal (process and product), projects, and portfolios. The results of the assessment using performance techniques and projects are averaged to obtain the final skill score for each subject. If a KD is measured by the same measurement several times, the optimum value is taken. Furthermore, such as the achievement of knowledge competence, write the achievement of skill competency in the report using numbers on a scale of 0-100 and a description.
Follow-up on Assessment Results

1. Remedial and Enrichment Learning
   Remedial and enrichment learning is carried out as a consequence of mastery learning for each individual. In the competency-based learning process, students must thoroughly master all basic competencies in each subject. So basically, students have to achieve learning mastery, namely the minimum level of competency achievement, especially for knowledge and skills. Remedial learning is given to students who have not achieved learning mastery, while enrichment is given to students who have achieved or exceeded learning mastery.

2. Reports
   The report card is a book of reports on the progress of student learning outcomes based on the results of assessments carried out by the teacher within a certain period of time. The results of the assessment reported include the achievement of attitude competencies (spiritual attitudes and social attitudes), knowledge, and skills. Attitude competence reports are given in the form of descriptions, while knowledge and skills are given in the form of integers (scale 0-100), and predicates are equipped with descriptions. All the teacher’s assessment results are used as material for compiling a report card and stored in the form of a student progress portfolio that can be shown to students and parents/guardians.

3. Class Promotion Criteria
   All assessment results for all subjects obtained by students (attitudes, knowledge, and skills) will determine whether the student has the right to attend class after being processed and analyzed. In general, students are declared to go to class if they meet the following requirements:
   a. Complete the entire learning program in two semesters in the following academic year.
   b. The value (description) of the attitude is at least GOOD according to the criteria set by the education unit.
   c. Scouting education extracurricular values are at least GOOD.
   d. Do not have more than two subjects, each of which has a knowledge competency score and/or skill competency score below the Learning Mastery (KB) score. If there are subjects that do not achieve learning mastery in the odd semester, the final grade is taken from the average of the odd and even semesters in the academic year.

General Provisions regarding Sources and Calculation of Subject Values in Student Learning Outcomes Reports are including:
1. Source of student learning outcomes reports
   The value of student learning outcomes reports is a cumulation of student learning achievements as measured through daily tests, midterm exams, and final semester exams with a variety of relevant assessment techniques and instruments. The learning achievement in question includes student mastery in all Competency Standards (SK) in each subject. In other words, an assessment is carried out for each Basic Competency (KD) in all SKs in each subject through various forms of assessment.

2. The value of student learning outcomes reports is the average value of daily tests, midterm tests, and end-of-semester tests/grade tests. The school determines the weight of each value. However, it is recommended that the score of the daily test be equal or more than the total score of the midterm and end-of-semester tests. The following presents several examples of the calculation’s value of student learning outcomes reports.
Example:
The Assignment scores and Daily scores, Mid Semester Test scores, and Final Semester scores are 3:1:1.
Assignment grades 1, 2, 3, and 4 = 60, 75, 70, 78
The average grade of assignment = 71
Daily repetition values 1, 2, 3, and 4 = 78, 75, 75, 80
Average daily repetitions = 77
The average value of assignments and the average value of daily tests are added up and divided by 2
Midterm test = 79
Repetition final test semester = 78

Therefore, the reported value of student learning outcomes is:
\[
\frac{(3 \times 74) + (1 \times 79) + (1 \times 78)}{5} = \frac{222 + 79 + 78}{5} = 76
\]

All subject scores are expressed on a scale of 0 - 100. Students who have not achieved KKM (Minimum Completeness Criteria) must be given remedial learning and assessment so as to achieve mastery. If in the time available (until the end of the semester) the person concerned has not yet reached the KKM (Minimum Completeness Criteria), the achievement/highest score obtained shall be included in the student learning outcomes report.

RESULTS

Assessment of Spiritual and Social Attitudes
Spiritual attitude assessment is carried out continuously for one semester. Assessment of spiritual attitudes in the classroom is carried out by the homeroom teacher. The attitude of students outside class hours is observed/recorded by the homeroom teacher. The homeroom teacher records student behavior that is very good or not good in a journal as soon as this behavior is observed or receives a report about this behavior. Assessment of social attitudes is carried out continuously for one semester. Assessment of social attitudes in the classroom is carried out by the homeroom teacher. The attitude of students outside class hours is observed or recorded by the homeroom teacher. The homeroom teacher records student behavior that is very good or not good in a journal as soon as the behavior is observed or receives a report about the behavior.

Knowledge Assessment
Knowledge assessment is carried out to assess student learning processes and outcomes. The assessment is carried out through daily assessments (PH), midterm exams (UTS), and final semester exams (UAS). Daily assessment can be done through written tests, oral tests, or assignments. The scope of the daily assessment includes one or more basic competencies, while the scope of assignments is adjusted to the characteristics of the basic competencies. In addition, an assessment of the portfolio of assignments and assessments can also be carried out to complete the description of knowledge at the end of the semester.

Midterm exams (UTS) and final semester exams (UAS) are conducted through a written test. UTS is an assessment activity carried out to measure the achievement of basic competence in subjects after learning activities last 8-9 weeks. UTS coverage includes all KD in that period, while UAS is an assessment activity carried out to measure the achievement of basic subject competencies at the end of the semester. UAS coverage includes all KD in one semester.
Skills Assessment

The implementation of skills competency assessment is carried out to assess student learning processes and outcomes. Process assessment is carried out through practical assessment during the learning process. At the same time, the assessment of results is carried out through product assessment, project assessment, and portfolio assessment given after learning. Skills competency assessment can also be carried out through daily assessments according to basic competency characteristics while skills assessments at UTS and UAS are according to the characteristics of each subject.

The use of ICT has enormous potential to improve the quality of education. In order to be able to enjoy ICT services, a PSB model design is needed to be developed so that it reaches the right target. The design of the PSB model was developed based on the concept of learning by taking into account the needs and conditions of the local area. All students and teachers actually have the same rights to be able to enjoy ICT services. This PSB design is not perfect. Therefore, it needs support both in policy and funding in accordance with their respective duties. In order to ensure the sustainability of the program, the design of the PSB system is complemented by mentoring, monitoring, and guidebook modules. The PSB design program can be seen in the section below.

Figure 2. Display Menu List of Minimum Adequacy Criteria

This research creates a menu that functions to input class, sub-class, educational unit data, input lesson content, scale, and local content options. To discover the type of religion, check the check box checklist for the religion.

Figure 3. Display of the Minimum Completeness Criteria Form

The next menu that is generated is course content, scales, core competencies, local content information, and action buttons. We can see how it looks in the image below.
The image above shows the report card menu that was successfully created. Report card menu to view a list of existing report cards consisting of Number, Class, and Academic Year. As well as the Fill Grade, Student, and Delete button actions. The resulting report card menu can be seen in the pictures below for more details.

After clicking the fill-in-value action button, a report card value filling form appears. For some data that needs to be input, such as choosing a semester, enter No. Parent Student. For example, there are data that need to be filled in Mathematics, including Daily P., Middle Semester P., Final Semester P., and Core Competency-4 (practices, products, projects, and portfolio). After the report card value filling form is filled with data, click the Save button to save the data that has been input.
After clicking the student action button, a list of student grades is displayed. The choice of the semester is the first and second semesters. The list of student scores consists of number, main number, name, Spiritual (KI-1), Social (KI-2), Lesson Content, Knowledge (KI-3), Skills (KI-4), and Action. There are two actions: the action to see details of student grades and the action to delete student grades. The display of the Student Value List can be seen in the image below.

**Figure 6. Display of Report Card Value Filling Form**

**Figure 7. Display of Report Card Value Filling Form**

**Figure 8. View Student Report Card Details**
The image below is displayed when we click on the detail action. Information to be displayed: grades, Daily Assessments based on Themes 1 and 2, Mid-Semester Assessments based on Themes 1 and 2, and Final Semester Assessments based on Themes 1 and 2. We can see the display as shown above.

DISCUSSION

Based on the results above, web servers generally act as servers that provide services to components that request information related to the web, on the web that has been designed on the internet. A web server is a computer that is used to store web documents, and this computer serves requests for web documents from its clients. From the definition above, it can be concluded that a web server is a computer that is used to store documents by accessing and displaying the web page from the client's computer.

Almost every electronic device is currently equipped with a web browser, starting from computers, cellphones, or gadgets that are equipped with a web browser that is commonly used to browse the internet. Web browsers can be interpreted as tools or applications used to search for information and open or browse internet pages via the web. A web browser is a software application used to retrieve and present web information resources. From the definition above, it can be concluded that a web browser is an application or software used to display information sources presented from a web server. From the explanation above, we know the importance of technology. Thus, implementing it in the educational field is essential. Jaka (2014) also adds that one of the efforts to increase education quality was the utilization of information and communication technology (ICT) for education. As it is known, technology has enormous potential to improve the quality of education. Therefore, all students and teachers actually have the same right to be able to enjoy ICT services. The statement above also supported by Sulfasyah and Nur (2016), who agreed that the lack of learning facilities is an obstacle to the teaching and learning process. Moreover, Pingge (2016) found that there is a significant effect between the elementary school teacher’s competency in using media and student's learning outcomes.

Research from Murniati, Purwaningsih, and Buwono (2016) stated that the percentage of contributions from the influence of learning facilities and infrastructure on student learning outcomes was very high. Thus, their research showed the importance of ICT in education. That's why PSB is very important to be designed in schools. This research works on creating an innovative activity, especially to support technology adaptation for teachers and students, such as using ICT as a social, educational movement. However, La Tjadi, Rawis, Londa, and Lengkong (2021) discover that the implementation of teacher innovation works apart from face-to-face communication and is also supported by technological media. Therefore, this is also in line with Machmud, Saerang, Soegoto, & Wenas's (2018) research which argues that information systems in schools must be able to build convenience for all students. To conclude it all, through a good information system the image of the school is also built.

CONCLUSION

Improving the quality of education can be done by utilizing information and communication technology (ICT). Research shows that the contribution of learning facilities and infrastructure to student learning outcomes is very high. The research showed that ICT is very important in education. Therefore, PSB is very important to be designed in schools. The results of the study showed that the PSB model can facilitate students and teachers at school. The process of processing assessment data can be processed quickly and accurately making it easier for teachers to determine the calculation of students’ final grades. Students can also improve the quality of their knowledge with PSB, which is equipped with school learning materials. To ensure
program sustainability, the design of the PSB system is equipped with mentoring, monitoring, and guidebook modules.

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