

Web-based Online Application for Information System of Student Report Card at SLBN Cinta Asih Soreang

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ABSTRACT

Monitoring learning outcomes in the form of report cards of competencies from students is a routine agenda of teachers to students in each semester. SLBN Cinta Asih Soreang in collaboration with the Politeknik Negeri Bandung Community Service program since 2021 has developed a student report card desktop application. This application has been run and successfully implemented, but not all devices are compatible to run the application. In addition, filling out reports can only be done at school because the desktop application storage can only be stored in a local area. In order to overcome these problems, it is necessary to develop an online-based system for digitizing student achievement reports. The proposed solution is the development of a Web-based online application for an information system for student progress report cards at SLBN Cinta Asih Soreang. The result reveals that more than 90% of participants feel this application is useful and can be utilized in the future.

Keywords: *student report card, web application, online and database.*

1. INTRODUCTION

One of the most important services in the educational process is the management of information related to recording student progress. Traditionally, recording of all activities in educational institutions, especially in areas with lower middle economic level, is still done manually. Recently, there have been attempts to utilize academic information systems to replace manual processes. According to **(Purwanto, 2017)**, the definition of an academic information system is a system that provides information services in the form of data related to academic data. Several attempts to implement information systems have been widely reported. Several papers **(Nugraha, 2017)(Maharani, 2017)(Alpiandi, 2016)(Saripudin, et al, 2020)(Irawan et al, 2016)(Ummah et al, 2020) (Raharjana et al., 2018)(Nurbojatmiko et al., 2020)(Wiranti et al., 2020)(Sari et al., 2018)(Pratama et al., 2017)** describe the development of information systems starting from a survey of the needs of stakeholders in educational institutions. This is followed by the

development of a database and an easy-to-use web interface. The types of services provided are quite varied, from student learning outcomes reports, student data, teacher data, homeroom teachers data, and school administrative staff data (TAS) [2] to E-Learning, Organizational Structure, Extracurricular, School Locations, News, School Agenda, Announcements, School Community, Teachers, Staff, Students, Alumni. Gallery, Guest Book, PSB Online (New Student Registration) **(Nugraha, 2017)(Maharani, 2017) (Adesina et al, 2022) (Liu et al, 2021) (Logachev et al, 2021)**. Several papers **(Djaelangara et al, 2015) (Prananosa et al, 2020)** specifically report on the construction of the database.

The rapid development of technology in this era has helped many human activities in meeting their needs. Based on the problems that have been described and various available references, the proposed solution is "Development of Web-based Online Applications for Student Progress Report Card Information Systems at SLBN Cinta Asih Soreang". SLBN Cinta Asih Soreang as a partner in implementing community service provides education for mental retardation, autism, deaf and visually impaired people in various levels from grade 1 elementary school to grade 12 high school.

The school has 26 teachers, as well as 66 male students and 39 female students divided into 27 study groups. The principal of the Cinta Asih Soreang SLBN is Yadi Haryadi. The curriculum used in the school is TKLB 2013 with the implementation of school-based management. For facilities and infrastructure, the school has 10 classrooms, 1 library room and 4 student sanitation units.

From this proposed solution, making an application will make it easier for homeroom teachers and interested stakeholders in recapitulating Student Progress and arranging a more organized archive. Processing of the results of the teaching and learning process of students at the Cinta Asih SLBN plays an important role in the process of measuring student progress and reporting it to parents. The digitization of data processing and management of learning outcomes will help the existing system, namely traditionally-written student progress report card to become faster and more precise. So this digitalization system is seen as having to be implemented immediately.

Currently, there are many studies and applications of digitizing student progress reports, one of which is at SMPN 1 Yogyakarta researching the Information System for Processing Student Grades Report. This research develops a computerized information system that can check grades, store and report student grades **(Putri, et al, 2013)**. Then at SMPK St. Antonius Kalipare where the information system created is web-based report (Linda). And there is research at SD Pekalongan Elementary School designing and implementing a report card system displayed on the website using a PHP framework and a database using MySQL **(Latumenten, 2017)**. From several studies, the application of an online report information system is beneficial for teachers. The inputting grades are efficient for both teachers and students because teachers do not need to collect grades from each subject, while students can easily access information about grades without having to wait for the semester to end **(Ayu, et al, 2019)**.

In general, digitizing reports card on the progress of student learning outcomes is done by creating an information system that can collect learning outcomes for each subject without having to be processed by the homeroom teacher by using a database for storage. Then the solution for digitizing the student learning outcomes report system in this community service will be divided based on the roadmap (Figure 1).

Web-based Online Application for Information System of Student Report Card at SLBN Cinta Asih Soreang



Figure 1. Roadmap of Community Service Activities at SLBN Cinta Asih Soreang

Last year, in 2021, the application for digitizing the Cinta Asih Soreang SLBN report card was carried out on the Local Area network. In general, the realization of digitizing the student report archive application is shown in Figure 2. The input used in the application was divided into 3 categories, namely student identity, quantity value, and quality value. The three categories were processed by adjusting the existing academic report card formats. The next process was storing archived data into a database so that searching, changing, printing or deleting data could be done practically. Finally, the output that had been produced was an academic report in accordance with the format used at the school. In the current year, 2022, the students report card digitization system will be developed online. A network will be built that can support participants to access the system by mobile.

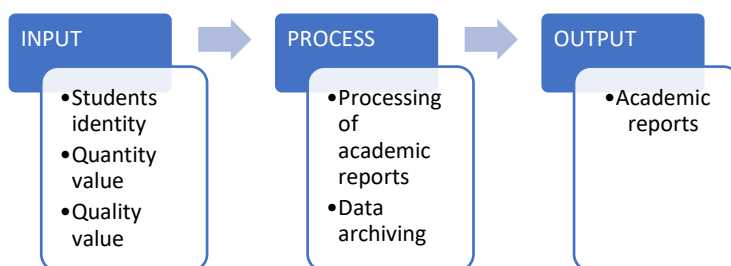


Figure 2. Block Diagram of the System

This system takes a lot of time to due to the unsupported infrastructure at the school. Figure 3 is the display of the application on the slbcintaasihoreang.com website when entering the student data input menu.

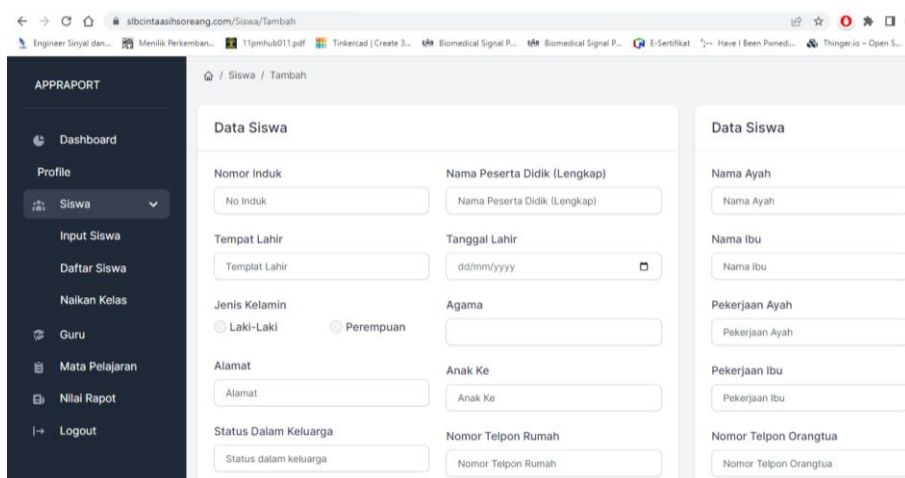


Figure 3. Student Data Input Menu

2. METHODOLOGY

The implementation method in this community activity was divided into four stages, namely the socialization stage, the counseling stage to the participants, the implementation stage and training on how to operate the online application, as well as the monitoring and evaluation stage.

2.1 Socialization

At the socialization stage, it was hoped that the participants got the idea of the importance of digitizing student progress reports card and school information systems. In addition, participants were also given an understanding of the importance of data access in conducting evaluation actions on student development.

2.2 Counseling

At this counseling stage, participants were trained on how to operate this digitalization system. The output of this second stage the participants were expected to be able to provide a clear picture of the system offered to them. The counseling was conducted online, attended by community service members and teachers from the Cinta Asih SLBN (Figure 4).

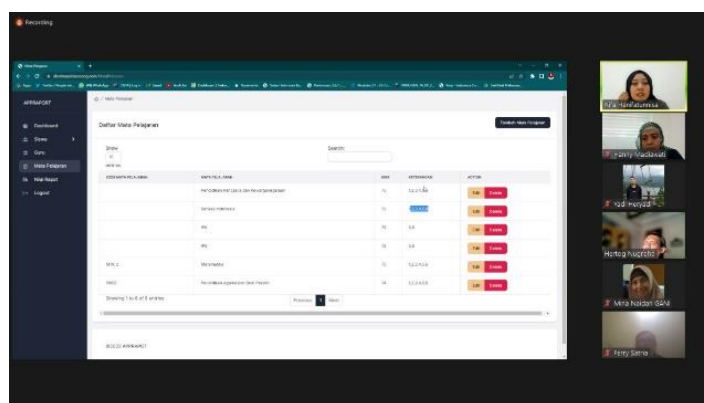


Figure 4. Counseling from the Polban Team

2.3 Implementation

The next stage is the implementation stage and counseling on how to view the data and operate the application made. Direct socialization at the SLBN Cinta Asih Soreang was held on July 29, 2022. An internal preparatory meeting was held before the implementation day of the implementation phase at the partner location by producing the following points:

1. Request to create 2 systems that are compatible with the old curriculum and the new curriculum.
2. Assessment in the old curriculum is in the form of knowledge and skills, while the new curriculum is only one assessment.
3. Preparation of a questionnaire as an evaluation material for the community service team.

At this stage, the participants experienced the data input process firsthand and were able to measure the effectiveness of the system that had been created. Having this stage, it was hoped that a real picture of the added value of using an online system could be provided (Figure 5).

Web-based Online Application for Information System of Student Report Card at SLBN Cinta Asih Soreang



Figure 5. Implementation Activity

The training was carried out offline according to the planned schedule. Figure 6 is a series of activities that have taken place. The results of the monitoring of several of these meetings were followed up as an evaluation material both in terms of tools and system readiness. Further discussions were also held with partners to overcome the obstacles faced and the development plan of the system that had been made.

2.3 Monitoring and Evaluation

The last stage was the monitoring and evaluation stage. The monitoring process started at the time of implementation and counseling. In the process, it would be seen to what extent the system works well and how effective the system offered by this program was. The monitoring plan was monitoring the data entered into the database on a regular basis. This monitoring meant that when the data was stored in the database, the application should have no problems in printing student progress scores. On this occasion the community service team was also interviewed by one of the TV stations about the program that had been going on and its benefits.



Figure 6. Monitoring and Evaluation

3. RESULTS AND DISCUSSION

After the training and counseling event, questionnaires were distributed to the participants to explore their opinion about the event. The questionnaire consisted of 4 questions. The target of the questionnaire was the teachers of SLB Negeri Cinta Asih Soreang, as many as 14 people. The survey questions on the use of the application are stated in Table 1. The calculation of the survey data was processed using the Likert scale method, revealing the calculation of the perceptions or opinions of respondents regarding the application.

Table 1. Questionnaire Result

No	Questions	Poor	Fair	Good	Very good	Excellent
1	Is the web appearance attractive?	0	0	0	8	6
2	Are the menus easy to understand?	0	0	3	8	5
3	Is it easy to fill in the information on the menus?	0	0	0	9	4
4	Does the information on the web match the information on the report card document?	0	0	0	0	14
	Sum	0	0	3	25	29

Based on the interpretation of the calculation scores from Table 1, the weights in Likert are as follows:

1. Excellent: 29 respondents x 5 points = 145 points
2. Very Good: 25 respondents x 4 points = 100 points
3. Good: 3 respondents x 3 points = 9 points
4. Fair: 0 respondents x 2 points = 0 points
5. Poor: 0 respondents x 1 point = 0 points

From the results of the interpretation of the calculation scores, the highest number of scales with a value of Excellent is $5 \times 56 = 280$, while the lowest scale with a value of Poor is $1 \times 56 = 56$ (56 is obtained from the number of questions multiplied by the respondents). So that the calculation is obtained as follows:

$$\begin{aligned}
 \text{Percentage} &= ((145+100+9+0+0)/280) \times 100\% \\
 &= (254/280) \times 100\% \\
 &= 90,71\%.
 \end{aligned}$$

From the calculation above, it can be concluded that the results of a survey conducted on teachers at the SLBN of Cinta Asih Soreang are in the "Excellent" category with a percentage of 90.71%.

Other information from the questionnaire also shows the respondents' interest in using online web applications as a substitute for report card documents. It can be seen in Figure 7, where about 7 respondents or 50% of respondents will use this online application, about 4 people or 28.6% answered that they will use both (desktop applications and online web), while the rest will use desktop-based applications that have been developed in the previous year.

Suggestions from the respondents will be used as a reference for improving the application, including the following:

1. Data filler in applications that are more flexible according to the specificity of each class.
2. Menu addition class.
3. Adding narration for filling out report cards.

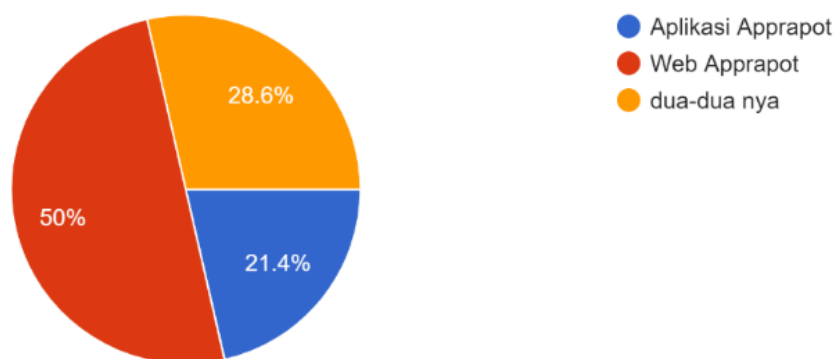


Figure 7. Pie chart of questionnaire results from the question "Which system will be used in the future?"

4. CONCLUSIONS

The program "Development of Online Applications for Student Report Card Information Systems at SLB Negeri Cinta Asih Soreang" has been successfully implemented. This program was created from the observation of one member of the Community Service team on the condition of manual report cards archiving, which allows files to be lost or not stored properly.

The designed online application has been successfully developed and has been tested for use directly with the partners of this program. Besides that, it has also received a response in the form of a questionnaire which will be used as an evaluation tool for the team to make improvements. The results of processing survey data from 14 respondents, using the Likert method, stated that this application is in the excellent range, with a percentage of 90%.

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