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Portable Library Automation Systems Implementation and Training in an Elementary School

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Abstract: *School libraries play a crucial role in literacy development by providing reading materials to students. Implementing library automation systems is an effective solution, enabling simplified cataloging, circulation control, and reporting. Automated systems streamline resource management and expand user access. The Senayan Library Management System (SLiMS), a freely available program developed to streamline library processes, is recognized as a potential option for enhancing a school's library feature and developing educational institution assets. The objectives of this community service were to implement a library automation system to enhance the school library features and services. Also, this activity was for system implementation experiences for the higher students. The community service initiatives were carried out in the SDN Gadog 2, Indonesia, between September and October of 2023. This concludes that SLiMS was successfully implemented, trained, and helpful as it enhances the flexibility of borrowing and accessing books.*

Introduction

Literacy development is a fundamental part of elementary education. Access to diverse reading materials from an early age builds strong literacy skills (Sulistyo et al., 2023). In the digital era, literacy includes traditional abilities like reading, writing, and digital literacy – navigating and utilizing digital information. Integrating technology into literacy instruction improves learning through enhanced resource access while developing digital competence.

School libraries play a crucial role in literacy development by providing reading materials to students. However, research shows that many school libraries have limited budgets, staff, and outdated systems that restrict effectiveness (Murphy, 2018). Implementing library automation systems is an effective solution, enabling simplified cataloging, circulation control, and reporting. Automated systems streamline resource management and expand user access.

The Senayan Library Management System (SLiMS), a freely (Nugraha & Wicaksono, 2023) available program developed to streamline library processes, is recognized as a potential option for enhancing a school's library feature (Bhakti et al., 2022) and developing educational institution assets (Chasannudin et al., 2023). It offers a more efficient and easily accessible learning resource for both students and instructors. A digital library system, such as SLiMS, is a comprehensive platform that efficiently organizes, distributes, and manages digital resources. The nature and scope of education have changed due to digital technologies, and education systems worldwide have had to adapt by implementing ICT integration strategies and policies. (Timotheou et al., 2023). They promote digital literacy and enable collaborative learning, aligning with the changing requirements of education. Implementing SLiMS is expected to significantly transform the library experience at elementary schools (Bhakti et al., 2022).

This community service program seeks to improve the library system at SDN Gadog 2, a Sukajadi, Bogor - Indonesia primary school. The benefits of e-technologies to education and the issues surrounding their use that must be resolved are discussed (Sych et al., 2021). SLiMS was recognized as a potential option for enhancing the school's library infrastructure, offering a more efficient and easily accessible learning resource for both students and instructors.

SDN Gadog 2 has been selected as the primary recipient of community service efforts because of its notable dedication to education. Nevertheless, the current library system encounters obstacles such as antiquated cataloging methods and restricted digital assets. The initiative intends to empower the school community by addressing obstacles and offering a dynamic platform, SLiMS, that enriches the educational experience.

The objectives of this community service were to implement a library automation system to enhance the school library features and services. Also, this activity was for system implementation experiences for the higher students. The following section explains the community service methodology.

Methodology

This community service was conducted at SDN Gadog 2 for approximately five weeks. This community service used a qualitative method. Internal discussions and searches for Internet literature were conducted before the community service started. This community service flow is shown in the following Figure 1:

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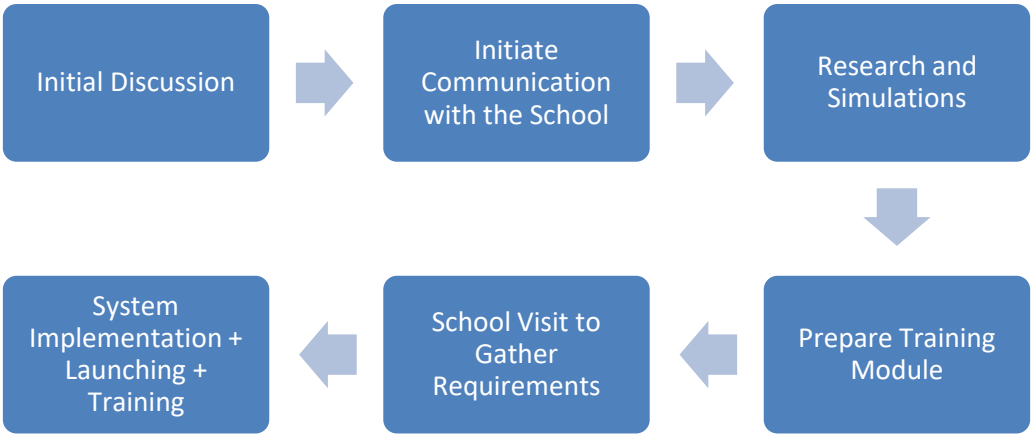

Figure 1. Community Service Flow Activities

Communications with the School were established in October 2023 and were primarily conducted through instant messaging texts. Prior to the commencement of the community service, the student team conducted visits and discussions with the school principal and Information Technology coordinator to gather information and user requirements. The school agreed to help in providing room facilities and arranging student and teacher schedules so they could attend the event. The library management system was made possible through SLiMS; the portable version was chosen as there was a limited time frame. On October 20, 2023, a discussion with the principal and a capability check was conducted to ensure whether the teacher's laptop could run the system.

Extensive research was conducted in preparation for the community service, including researching suitable databases (such as MySQL, MariaDB, and PostgreSQL) to store the books for the library. The team held Internal discussions for workflow and results of the simulations for the actual implementation of the library management system. Multiple simulations were conducted through Virtual Machines with different Operating Systems and web server stacks to successfully produce a library management system that is feasible to implement at the school. The team also developed a guidebook containing a step-by-step tutorial on operating the system, which was distributed to the teachers at the school.

On October 21, 2023, system installation and teacher training were conducted to introduce how to operate the management system. A training session was held for the teachers to familiarize them with the online library management system and the guidebook. The teachers were also given pre- and post-implementation and training surveys to assess their satisfaction

with the system and the training session. Several pieces of equipment were procured to develop the online library management system, including a universal serial bus, handed over to the school at the end of the community service.

Results

The library automation system has been implemented successfully in the school in portable mode for a preliminary solution. Some customizations have been made, the library name has been updated, and the library logo has been updated using the elementary logo. It is shown in the following Figure 2:

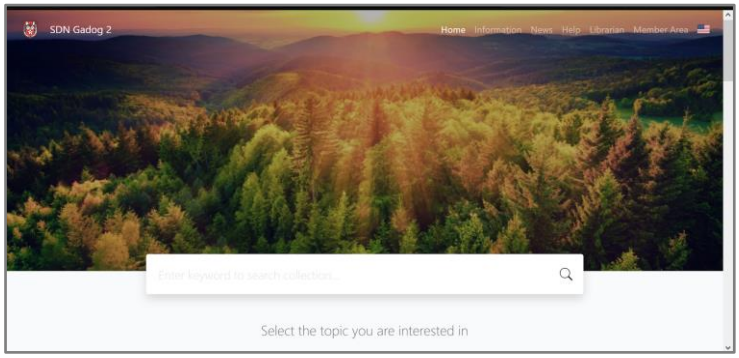

Figure 2. SLiMS Interface for SDN Gadog 2

Contributions were made in the form of new books during the community services in a larger group to improve the library services even further for the students. The training was done through a presentation along with a live demonstration in a classroom at the school. Furthermore, a guidebook was handed out to help the teachers operate the system. Following Figure 3 shows the knowledge-sharing process:

Figure 3. Knowledge-Sharing Session with the Participants

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Hard-copy survey forms with two related instruments were distributed to the participants during the event. The following section will discuss the community service results.

Discussions

A hard copy questionnaire was generated and distributed before the closing ceremony. Two instruments related to the library automation system implementation from the questionnaire were then extracted and shown in the following Figure 4:

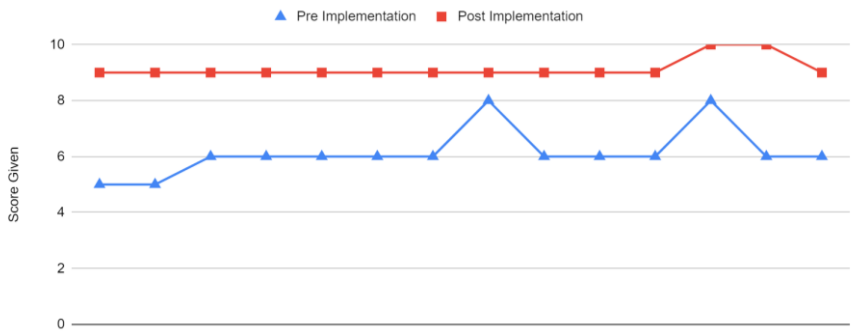

Figure 4. Pre- and Post-Implementation Response

According to the data from the satisfaction surveys, the teachers who attended the training were satisfied with the provided assistance. The data shows increments in the gaps between pre and post-implementation in teachers' satisfaction. This result implies that all teachers felt that SLiMS is very helpful as it enhances the flexibility of borrowing and accessing books in the library. Furthermore, the teachers were grateful and wished for this community service to continue.

Table 1 shows the series of all community service activities completed in SDN Gadog 2. Several supporting materials for the library development were prepared. Discussions with the school representatives began in September 2023. The library implementation was on October 21, 2023.

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Table 1. Series of Community Service Activities

#	Activity	Status	Schedule
1	Initial Discussion	Completed	09/2023
2	Initiate Communication with the School	Completed	09/2023
3	Research and Simulations	Completed	10/2023
4	Prepare Training Module	Completed	10/2023
5	School Visit to Gather Requirements	Completed	10/2023
6	System Implementation + Launch + Training	Completed	10/2023

Conclusions

This article describes several community service initiatives carried out in the SDN Gadog 2, Indonesia, between September and October 2023. This concludes that SLiMS was successfully implemented, trained, and helpful as it enhances the flexibility of borrowing and accessing books. For future recommendations, the ideal approach is to use micro-PC since SLiMS has been unable to operate over the network.

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References

Bhakti, M. A. C., Mantoro, T., Ayu, M. A., Tarigan, W. H., Effendi, N. L., & Wandy, W. (2022). Elementary School Library Automation System Implementation. *Journal of Community Services: Sustainability and Empowerment*, *2*(02), Article 02.

Chasannudin, A., Aqiliya, K. A., Afroh, A., & Syifa, A. M. (2023). Pendampingan Penggunaan Slims (Senayan Library Management System) Dalam Upaya Revitalisasi Perpustakaan Sekolah Dasar. *ALKHIDMAH: Jurnal Pengabdian Dan Kemitraan Masyarakat*, *1*(4), Article 4. https://doi.org/10.59246/alkhidmah.v1i4.501

Murphy, P. H. (2018). School Libraries Addressing the Needs of Ell Students: Enhancing Language Acquisition, Confidence, and Cultural Fluency in ELL Students by Developing a Targeted Collection and Enriching Your Makerspace. *Knowledge Quest; Chicago*, *46*(4), 60–65.

Nugraha, A., & Wicaksono, H. (2023). *SLiMS - Senayan Library Management System—Beranda*. https://slims.web.id/web/

Sulistyo, E., Bhakti, M. A. C., Nurprihatin, F., Liman, S. D., Lestari, T. E., Islam, S. S., Mileniawati, I. R., Djajasoepena, R., Ilham, O. S., Effendy, M. I., & Wandy, W. (2023). Junior Highschool Library Automation System Solution and Implementation. *Journal of Community Services: Sustainability and Empowerment*, *3*(01), Article 01.

Sych, T., Khrykov, Y., & Ptakhina, O. (2021). Digital transformation as the main condition for the development of modern higher education. *Educational Technology Quarterly*, *2021*(2), Article 2. https://doi.org/10.55056/etq.27

Timotheou, S., Miliou, O., Dimitriadis, Y., Sobrino, S. V., Giannoutsou, N., Cachia, R., Monés, A. M., & Ioannou, A. (2023). Impacts of digital technologies on education and factors influencing schools' digital capacity and transformation: A literature review. *Education and Information Technologies*, *28*(6), 6695–6726. https://doi.org/10.1007/s10639-022-11431-8