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Optimizing field work practices in vocational schools by developing a management information system

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ABSTRACT

The management information system is not yet optimal. This research aims to develop a work practice management information system for vocational school students. The method used in development is the SLDC waterfall model. Management, database, and website feasibility data are obtained through feasibility sheets. Trial data via questionnaire. Descriptive data analysis. The results of the feasibility assessment of the work practice management information system carried out by management experts, database experts and website experts indicate that it is suitable for use. Respondents gave positive responses. The developed management information system can simplify data management and make it easier to make decision data on vocational school students' field work practice.



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Introduction

Field work practice is a form of final academic activity that must be taken by every vocational school student. It serves as a bridge between the academic curriculum and the practical skills acquired via on-the-job training in the commercial and industrial sectors. This will create quality graduates who are ready to work (Munthe & Mataputun, 2021). Every student who has implemented the field work practice program is required to make an activity report and submit it to the school. Field work practice is given to vocational high school students who have entered class 2 or class XI vocational school. The aim of Field work practice is to provide students with the skills and experience to implement the knowledge they already have in the world of work.

Field work practice aims to enable students to have direct work experience and to instill a positive work climate that is oriented towards caring for the quality of work processes and results (Zebua, 2021). Apart from that, street vendors can motivate students to improve basic skills, professional attitudes and increase knowledge (Anjum, 2020; Pradana, 2019; Syahrini, 2014). Field work practice is carried out once by students during their education at the vocational school level. This program is implemented every year and students who are required to carry out practical field work are those in class XI (eleven). Field work practices require a management information system to assist in managing activities.

Management information system (MIS) on field work practices can help students, department heads and internship examiners. These three processes, namely being able to access the system anywhere and anytime. Management information systems facilitate administrative systems such as guidance consultations, filling out

logbooks, and assessments including assessing and monitoring activities (Arizal et al., 2022; Moeinzadeh et al., 2021; Puranti et al., 2021).

In fact managing field work practices still uses manual methods, namely students have to register through the homeroom teacher first so it takes a long time (Naldo et al., 2022). This is reinforced by other research where management of field work practice is generally managed manually, data collection on internship participants and companies or institutions in the industrial world has not been prepared systematically (Hardyanto et al., 2018). Even though the existence of an information management system is really needed.

Information systems help work processes in organizing data and communicating information (Wadjdi & Yuliza, 2023). The internship management information system is an implementation of technology in the education sector in changing the concept of data processing from physical form to digital data and assisting communication for all parties involved in organizing internships (Yannuar et al., 2018). Information technology requires technological developments and communication which really helps organizational performance and business processes (Maharani et al., 2019). Its development must produce benefits for the school so that academic implementation runs smoothly, as well as assist the organization in carrying out the necessary business processes so that it helps organizational managers make decisions.

Many field work practice information systems have been developed, PKL report information systems (Rauf & Prastowo, 2021), report monitoring systems (Aris et al., 2021), PKL monitoring systems (Febriani et al., 2022) and participant data processing information systems internship (Meisak et al., 2019). The results of the ongoing analysis of the management information system-PKL show that the current system still has a number of shortcomings and still requires a lot of further developments (Aris et al., 2021). The current system is still done manually, so the reports produced are not accurate, existing data cannot be recorded properly, there is no adequate system security, and the current system cannot produce a monitoring information system quickly and accurately. Apart from that, the internship system is still in place carried out manually is prone to delays in work completion and backlogs documents, in this case there is no information system that can make registration easier, daily monitoring agenda, and internship assessment (Baiduri & Susilawati, 2019).

The existing management information system is not yet optimal in facilitating the needs of students, parents, teachers, schools and partners. It, needs to be developed according to the needs of users. This research has a specific aim, namely developing field work practice information systems, which is practical, can be accessed anytime, anywhere and can improve vocational high school management. Research into the development of management information system is important because meets the needs of students, teachers, teachers, parents, and schools.

Method

This research uses the development of a management information system. The stages used in development are the SLDC waterfall model. The SLDC waterfall model is a software development method with systematic and sequential stages (Rohman & Brilian, 2023; Supiana, 2022). The research stages are as follows (figure 1) (Rijanandi et al., 2022; Stefanus & Andry, 2020): 1) Analysis. The analysis stage is an identification of the system's requirements, starting from functional requirements (types of requirements containing processes carried out by users and non-functional requirements (components that a system must have); 2) Design. The design stage is an advanced stage of analysis, where at this stage three designs will be presented, namely: Data Flow Diagram (DFD), Entity Relationship Diagram (ERD) and Wireframe; 3) Implementation. The implementation stage is the coding process stage. At this stage, the database design and interface are also built using a programming language; 4) Testing. Testing is a critical element in determining the quality of software which includes design, specifications, and coding. In this section, the testing stage is carried out on users, namely students, teachers, operators, parents, and Du-Di partners. At this stage the researcher carried out testing using the black box testing method (Y. Firmansyah & Jamillah, 2018). This is because black box testing researchers can find out whether SIM-PKL can be run according to user needs or not; 5) Maintenance. The information system that has been developed does not rule out the possibility that it will experience changes when it is used by the user. Changes can occur if there are errors or developments in the system so that information system maintenance is needed.

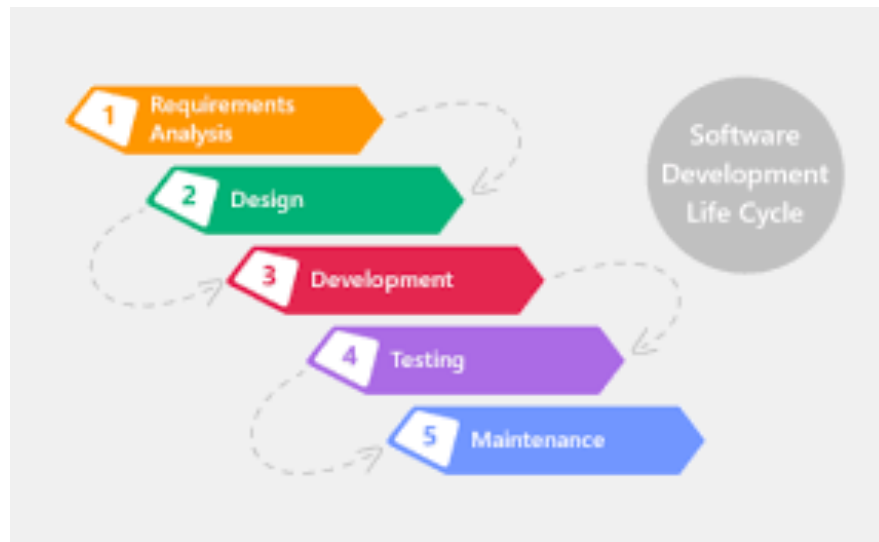


Figure 1. Stages of the SLDC-Waterfall model

Data collection techniques

Research data was obtained using data collection techniques in the form of eligibility sheets and response questionnaires to MIS. The feasibility test consists of management experts, database experts and website experts. The management feasibility sheet and database each contain 7 indicators, while the website contains 5 indicators. The response questionnaire for the MIS consists of 3 indicators (16 questions).

Data analysis technique

The feasibility and response data obtained for MIS were analyzed descriptively.

Results and Discussions

This research developed MIS to optimize vocational school students' field work practice. MIS was developed, so that field work practice can be managed easily, quickly, precisely and accurately. Development begins with needs analysis. Needs analysis is carried out by mapping user needs and non-functional needs in the form of components in SIM-PKL. SIM -PKL display of design and development results in Figure 2.

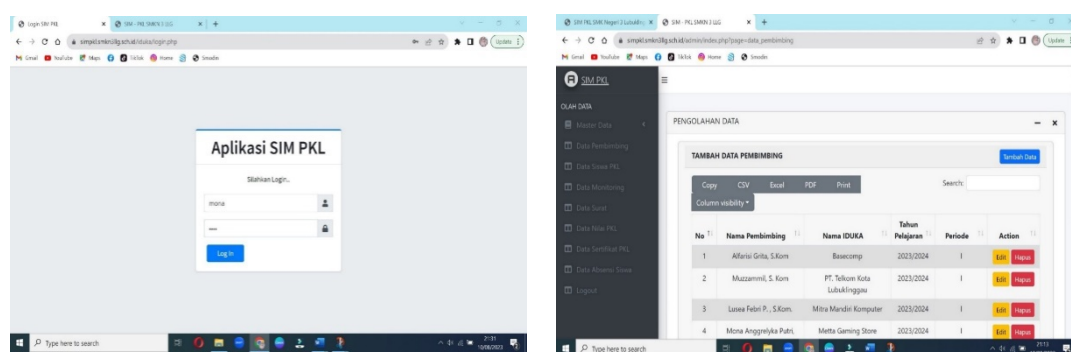


Figure 2. View of a PKL SIM a. SIM-PKL Front Page; b. Menu Page

The MIS that has been developed is tested for feasibility by management experts, databases and websites. The feasibility of management was assessed by 3 lecturers from universities in Lubuklinggau City. The results of the feasibility test by management experts are in table 1. All indicators on the feasibility sheet were in the feasible category. This shows that the developed MIS has the capability for data management. Data management is very necessary for an institution or organization to facilitate data processing (Istiqomah et al., 2020). Apart from that, the existence of SIM-PKL can make it easier to obtain data, manage and provide information to parties who need it and perform more efficiently (Damayanti et al., 2022; Hasan & Muhammad, 2020).

Table 1. Management Expert Feasibility Test Results

No	Indicator	Category
1	Guide Menu	Valid
2	PKL Student Menu	Valid
3	Monitoring menu	Valid
4	Mail menu	Valid
5	Learning Outcome Menu	Valid
6	Certificate Menu	Valid
7	Student absence menu	Valid

The suitability of the database was assessed by 3 IT experts. Database experts evaluate relationships between tables and flowcharts of the product being developed. Database feasibility test results in table 2, all indicators are feasible. This shows that the relationship between tables and management information system flowcharts is feasible. Relations between tables are used to combine or connect data from one table with other tables (Hotman et al., 2020; Vincent Junaidi & Dewayani, 2023). In management information system there are 7 table relationships and flowcharts, all of which work and are feasible. Testing management information systems by experts is very important. This is because experts will provide input so that the MIS developed can be optimal. If the existing functionality of the software that has been tested is feasible then the information system has been successfully developed (Apriani et al., 2022). Apart from that, so that when used by users it can be accepted and avoid mistakes (Wirawan et al., 2018).

Table 2. Database Expert Feasibility Test Results

No	Indicator	Category
1	User and supervisor table relationships	Valid
2	Relationship between table users and street students	Valid
3	User and monitoring table relationships	Valid
4	User and mail table relationships	Valid
5	User table relationship and Learning outcome	Valid
6	Relationship between user table and certificate	Valid
7	Relationship between user table and student absence	Valid

The suitability of the website was assessed by 3 IT experts. Website experts evaluate the field work practice data implementation system developed online. The validation results were carried out to see the feasibility of the database system implemented online. Website feasibility test results in table 3, all indicators are feasible. This shows that the website hosting management information system is feasible and accessible.

Table 3. Website Expert Feasibility Test Result

No	Indicator	Category
1	Content	Valid
2	Readability	Valid
3	Speed	Valid
4	Technological sophistication	Valid
5	Access	Valid

Test Result

Test try management information system is carried out to assess convenience, suitability to needs, data processing and display. Management information system trial on 20 people (staff and teachers) of Vocational School 3 Lubuklinggau and 10 IT experts. The test results in table 4 show that overall respondents gave a positive response of 90.67%. This indicates that the respondent accepted the developed management information system. Users can accept an information system due to usability factors (Firmansyah, 2021). Usability is an effective and fast experience that users gain in operating an application or web (Sembodo et al., 2021).

From the results of the response test, it is indicated that the MIS can be used in street vendors' activities, so that it can simplify program management. This is in line with Anindya et al. (2024) statement that management information systems make managerial tasks easier and speed up performance. Apart from that, MIS can facilitate management in planning, supervising, directing, and delegating tasks (Fatmawati et al., 2022). With this management information systems, all students, teachers, school, parents and partners will be able to view all practice archives properly, starting from the list of students, practice supervisors, practice places, achievement of targets and practice grades (Chawari et al., 2021).

Final academic activities that must be taken by every vocational school student. Every student who has implemented the field work practices program is required to make an activity report and submit it to the school. PKL is given to vocational high school students who have entered class 2 or class XI vocational school. The aim of field work practices is to provide students with the skills and experience to implement the knowledge they already have in work industries.

Table 4. User Response

No	Aspect	%
1	Convenience	85.80
2	Conformity to user needs	93.75
3	Data processing	87.30
4	Appearance	95.85
Mean		90.67

Conclusions

From the research results it can be concluded that the management information systems is suitable for use. The management information systems that have been developed is expected to facilitate the management field work practices program.

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