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Internship Monitoring System to Foster Practical Skill for Vocational High School Students

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Abstract

Internship (INTERNSHIP) is an important part of the vocational education curriculum in vocational high schools, including SMK Negeri 1 Gesi. However, its implementation often faces various obstacles, such as inefficient communication, delayed reporting, and difficulties in monitoring student progress. To address these issues, an Internship monitoring system has been developed with the aim of optimizing the learning process. Therefore, this research aims to develop a internship monitoring system that is suitable for use by vocational high school students to support their activities. The research method applied in this study is research and development adopting the Alessi & Trollip model. The research subjects include software/media experts, content experts, and teachers. Data collection is carried out using observation, interviews, and questionnaires. The data obtained from the research is then analyzed qualitatively descriptively and quantitatively in terms of percentage. The research results show that in the alpha testing phase, the internship monitoring system product received a High Validity qualification from experts. Based on these results, it can be concluded that the internship monitoring system product deserves the category of high feasibility to use as an application or system to support a series of internship activities, both for teachers and students.

Keywords: Field practice; vocational school; Monitoring; Software; *INTERNSHIP*

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INTRODUCTION

To remain competitive on a global scale, change is unavoidable. We must have a skilled human workforce prepared to face the era of Society 5.0. Currently, the boundaries between humans, machines, and other resources are becoming increasingly blurred, which has an impact on various aspects of life (Mahmudah & Putra, 2021). Thus, education is critical to preparing the workforce to keep up with these changes (Lee, 2018). Therefore, the education sector must be able to produce skilled individuals who are creative, innovative, and competent in technology while also demonstrating an awareness of local and global environments (Haryono et al., 2017). The current human resource development still faces issues, including unemployment and a lack of skilled workers, which hinder economic growth (perennial problems). According to the National Labor Survey, Indonesia's Open Unemployment Rate (TPT) is expected to reach 5.86% of the workforce or approximately 8.4 million people in 2022. Poor job requirements and the quality of human resources are the main factors contributing to Indonesia's high

unemployment rate. Therefore, high-quality training for the workforce is necessary to meet the hopes of the labor market (Agustariansyah et al., 2020).

Vocational High School (VHS) is an educational institution that focuses on preparing students for the workforce. Vocational education is defined in Article 3 of Law No. 20 of 2003 concerning the National Education System as secondary education that prepares students to work in specific fields. In Vocational high school, the Visual Communication Design Department is crucial in producing skilled employees in Graphic Design, Animation, and Multimedia. Internship is an important part of the Visual Communication Design Department in VHS curriculum to prepare students to face challenges in the workforce. According to a statement Sasmito et al. (2015) that due to poor performance and low readiness assessments, VHS graduates are less prepared for work.

Consequently, vocational high schools must collaborate with partner institutions to enhance students' capabilities, particularly through Work-Based Learning (Arfandi & Sampebua, 2016). One way to adapt the workforce is by focusing on building Internship, as stipulated in Permendikbud Nomor 50 Tahun 2020. According to the Internship Guidelines (Directorate of Vocational High School 2023), the objectives of the Internship subject are to integrate soft skills into the world of work, apply technical skills learned in actual work according to the Operational Standard Procedures (POS) that are in effect, enhance and develop specific skills in a particular field by the curriculum and industry needs, and provide students with the opportunity to engage in entrepreneurship independently. Internship is conducted precisely and systematically to enhance students' competitiveness in the workplace (Miftahul Jannah, Anas Arfandi, 2016). To be competitive in the workforce, the performance of students during Internship is a crucial factor. However, at SMKN 1 Gesi, a major challenge still faced. Students in implementing Internship activities have not yet reached optimal levels, with some students still not taking internship seriously, resulting in decreased performance. This, in turn, has an impact on the low readiness of graduates for industry-appropriate fields.

Alignment with the curriculum is crucial to ensure that students' performance during internship is in line with the existing Visual Communication Design vocational school curriculum and provides students with the opportunity to apply what they have learned in school. Graduates who are ready for work are those who possess specific characteristics that are suitable for the desired job and have the opportunity to advance (Ismoyo, 2023). Having the qualities and abilities that ensure success in the workplace is also referred to as work readiness (Makki et al., 2016). Furthermore, it indicates how far an individual has developed in terms of attitudes and knowledge to prepare themselves for success in the workplace (Slameto, 2020).

In order to address this issue, it is essential to conduct performance and readiness analysis during the internship. This analysis is crucial for evaluating whether the internship carried out by students of Visual Communication Design Department meets the industry-related standards of Visual Communication Design and whether the students receive relevant performance. The supervisor of the internship has a vital role in helping students develop their skills and knowledge. The use of a system for monitoring is important for understanding how the system

is used to monitor the performance of students during internship and how well the system collects relevant data.

Research conducted by Baert et al. (2021) titled "Student Internships and employment opportunities after graduation: A field experiment" found that students who performed well during internships had a high chance of being invited for an interview or being offered a job. Another study by Kapareliotis et al. (2019), titled "Internship and Employability Prospects: Assessing Student's work readiness" explained that students who participated in internships with good performance were positively evaluated in all aspects of work readiness. Similarly Tanziilal & Widodo (2022) emphasized that the level of student readiness is in the high category, as seen from the success rate of practical industrial internships. Finally, Rohman (2020) research found that the performance of the internship has a significant influence on the readiness of the students.

One important step in their academic journey is through Internship, which serves as a bridge between the theories learned in the classroom and the dynamic reality of the professional world. Internship is not just a series of practical activities, but also a test of students' readiness for work. Vocational high schools must continue to collaborate with Industry/Workplace to enhance students' abilities, especially through real work experience. One way to adjust the workforce is by focusing on building fieldwork practices (Lestari & Pardimin, 2019). According to Permendikbud Number 50 of 2020, internship is the learning provided to Vocational High School students through fieldwork practice for a certain period of time in accordance with the curriculum and work needs (Wibowo et al., 2022). This internship is carried out properly and organized to enhance students' abilities to compete in the workplace (Sitanggang, 2020).

Advances in communication technology currently allow for accurate and reliable access to information without geographical limitations. One example is data processing through websites that can be accessed at any time and from anywhere (Yusof, 2019). These websites can also serve as a dashboard for monitoring and reporting required data. Therefore, in this digital era, the utilization of information technology is the appropriate solution to overcome various obstacles in the internship monitoring process (Andyani et al., 2020). The internship monitoring information system is an innovation that can enhance the efficiency and effectiveness of internship management. This system enables all parties, including students, academic advisors, field advisors, and school or campus administrators, to interact and access information in real-time and transparently (Bicalho et al., 2022). This technology is extremely useful for schools as an effective tool in supporting the learning and teaching process and executing the system, as well as producing accurate, reliable, and effective data.

SMK Negeri 1 Gesi is a State Vocational High School in Central Java. The school offers three department: Fashion Design, Visual Communication Design, and Light Vehicle Engineering. One important component of the curriculum is internship program, which allows students to gain direct experience in the industry. Internship is a part of vocational curricula in Vocational High Schools that involves the industries. The aim of internship is to provide students with the opportunity to apply technical competencies according to their expertise and internalize positive values from industries. During internship, students are guided by experienced

practitioners in their field. The implementation of internship at SMK Negeri 1 Gesi encountered several issues during its implementation. The process began with mapping and determining the placement of students according to the majors and quotas requested by the industry or company. internship activities lasted for 1 semester, during these time the internship coordinator selected a supervising teacher for each major. The supervising teacher was responsible for monitoring all scheduled internship activities. The purpose of this monitoring was to collect information to improve the quality of internship implementation. The placement of students, the preparation of the program, the implementation materials, and the intensity of supervision were part of the monitoring process, as well as identifying problems that arose during internship.

The internship program still faces various challenges in terms of effectiveness and efficiency. One of the main problems is the lack of discipline among students during internship. Additionally, monitoring by supervising teachers during internship was also inadequate. Monitoring was only carried out once a month, making it difficult for teachers to obtain the latest information about student activities at the internship location. This results in a lack of control and supervision over student activities during internship.

Previous research findings indicate that some schools have begun to utilize information systems to manage internship and internships for students. Additionally, this monitoring information system has been successful in increasing students' independence and responsibility towards their obligations as students carrying out field work (Pambayun et al., 2023)(Febriani et al., 2022). The advantage of this information system lies in its ease of access, as it can be accessed through students' smartphones or laptops, and contains clear instructions, plans, and steps for carrying out field work as well as guidance for filling out daily journals, which does not confuse students or teachers in operating the system. Therefore, one effort to address the issues at SMA 1 Gesi is to use a student field work monitoring system product that can be accessed through various devices, whether laptops or smartphones. Hence, this research aims to develop a software product for monitoring student internship that is suitable for supporting activities both during and after the completion of internship for vocational high school students.

METHODS

This research is included in the Research and Development (R&D), One of the R&D models adopted for this research is the Alessi and Trollip model, which consists of three main steps: planning, designing, and development (Alessi & Trollip, 2001). The selection of this model is based on the consideration that it provides a systematic approach and focuses on developing a product that can be applied in learning activities.

Meanwhile, this research only focuses on determining the feasibility of the product decided through product testing by experts or alpha testing. As previously explained, the development model in this research will follow the Alessi & Trollip model, which consists of several steps: (1) Planning, (2) Design, (3) Development. Here is an overview of the research and development procedure that showed figure

1.

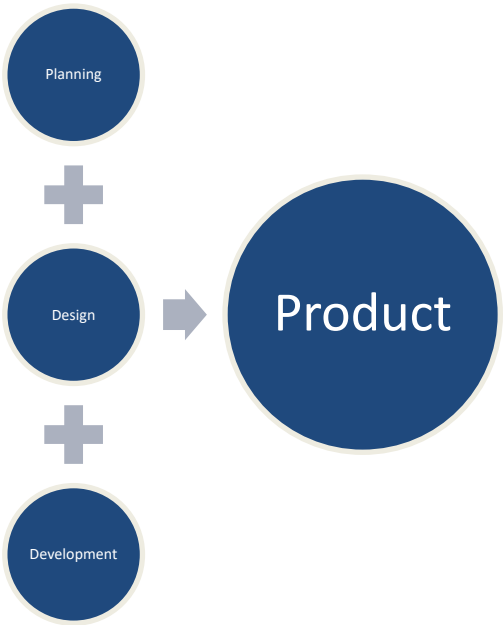

Figure 1. Development Model

This research involves several subjects, including vocational high school teachers, media experts, and curriculum experts, comprising three vocational high school teachers, two software/media experts, and one curriculum expert (Oktarina et al., 2021). For data collection techniques, the study utilizes non-test methods such as observation, interviews, and questionnaires, which are based on previous research by (Rejekiningsih et al., 2021) and (Septiantoro & Widaningsih, 2022). Each data collection technique is tailored to different stages of the research process; for example, observation and interviews are used during the planning phase. Active learning observations are conducted using observation sheets, while interviews are conducted using a list of questions to uncover information about the needs of teachers (Rachman et al., 2022).

The feasibility of the product developed, namely the internship monitoring system for high school vocational students, was assessed using a questionnaire as an instrument. The questionnaire adopted in this study is a Likert scale with a four-tier evaluation scale, consisting of very appropriate, appropriate, inappropriate, very inappropriate with scores ranging from 1 to 4 (Ningtyas & Jati, 2018). Detailed information on the questions for curriculum experts, media/software experts, and practitioners is presented in tables 1, 2, and 3.

Table 1. Media / Software Expert Instrument Grid

No	Assessment Aspect	Indicator
1	Functionality	All pages work fine Every button works fine Every navigator works fine
2	Reliability	Ability to be accessed by many people There is trust in the system

		Can be used repeatedly
		Makes it easy to collect reports
		Makes archiving activities easier
		Efficient in solving problems
3	Usability	The system works as intended
		Practical to use
		System operation is not complicated
		Fun system to use
4	Efficiency	Page access speed
		Data processing speed
		There is a warning signal
5	Maintenance	System management
		Ease of repair
		Ease of system development
		Can be accessed via several browsers
6	Portability	Can be accessed using a PC
		Can be accessed using Android

Adapt from research (Lutfi et al., 2021; Puruwita et al., 2022)

Table 2. Material Expert Instrument Grid

No	Assessment Aspect	Indicator
		Suitability of material to the needs of vocational school students
1	Content	Accuracy and factuality of the material
		Relevance and accuracy of content for street vendors' activities
		Level of clarity and understanding of the material
		Completeness and relevance of material to practice in the field
		As an aid in monitoring and evaluating street vendors
2	Usefulness	Minimize errors and misinterpretations in internship reporting
		Makes it easier for lecturers to provide direction and feedback to students during internship

Adapt from research (Sudana et al., 2019; Hariyani et al., 2021)

Table 3. Learning Practitioner / Teacher Instrument Grid

No	Assessment Aspect	Indicator
1	Visual Communication	Text readability
		Color combinations in applications
		Clarity of command/navigation buttons
		Reliability of monitoring features
2	Functionality	Complete features that support street vendors' needs
		Ease of access and use
		Makes it easier for teachers to monitor and provide direction to students during internship
3	Usefulness	Minimize errors and misinterpretations in internship reporting

Adapt from research (Yuningtyas et al., 2023; Puruwita et al., 2022)

Before being utilized, each instrument was prepared for validation through consultation with experts in the relevant field. The validation process involved

selecting an expert for each type of instrument, who was then invited to discuss the items to be used in the research. In the context of this study, the supervising professor acted as an expert providing input during the instrument validation process (Sugiyono, 2018).

The collected data was then analyzed, particularly the product evaluation questionnaire for the internship work system for vocational high school students, using descriptive techniques based on the average percentage rating of the total validation results (Andriyani & Suniasih, 2021). The product feasibility analysis required a minimum percentage score of 63% for the product to be considered suitable as a system that can be operated to support internship activities. Table 4 below shows the conversion of the product feasibility criteria adopted from the research (Lund & Karlsen, 2020).

Table 4. Software eligibility criteria

Percentage	Qualification	Decision
82 – 100%	Very good	Very Eligible
63 – 81%	Good	Eligible
44 – 62%	Enough	Less Eligible
25 – 43%	Deficient	Not Eligible

RESULTS & DISCUSSION

The planning stage is the initial step in developing a internship monitoring system product. Data is successfully collected through observations and interviews, such as the results of the latest observation conducted during a briefing session for vocational high school students who will undergo internships or fieldwork at a company. The planning stage focuses on why the system to be built is needed. The internship Monitoring System at SMK Negeri 1 Gesi is designed to facilitate supervising teachers in monitoring, evaluating, and assisting students in filling out daily internship activities. This can be answered by identifying the problems that occur. The demand for a system (system request) is a response to the existing problems. In its implementation, observations are made on the running system, and interviews with stakeholders. In this study, observations were carried out by observing the standard operating procedures at SMK Negeri 1 Gesi and interviewing sources such as the Public Relations representative as the person in charge of internships, supervising teachers, and students at SMK Negeri 1 Gesi regarding the procedures or difficulties in their implementation. Then, the data collected from observing standard operating procedures and interviews are reported to superiors for analysis and evaluation. After the data from observing standard operating procedures and interviews are grouped and reported to superiors, a comprehensive analysis and evaluation are conducted to evaluate the effectiveness and efficiency of the process, as well as identify areas that need improvement. The results of this analysis and evaluation are used to propose relevant recommendations and improvement plans to enhance the quality and effectiveness of SOP, and ensure that the process continues to run efficiently and effectively.

The system analysis aims to identify weaknesses or obstacles found in the

current running system, in order to obtain a clearer and more accurate picture of the existing system. Consequently, improvements or new systems can be developed to address existing issues and enhance the overall efficiency and effectiveness of the system. Furthermore, system analysis can also help in identifying areas that require further attention and influence better strategic decisions in the future system development. Based on field observations, there is a brief overview of the system running in the internship Monitoring System at SMK Negeri 1 Gesi, where the system used is still manual. The implementation of internship lasts for 6 (six) months, while the supervising teacher only monitors the location once a month. Therefore, the supervising teacher faces difficulties in obtaining information about whether the students are present or not, whether they are seriously working on their tasks at the location, and also faces challenges in evaluating the students. The students filled in a journal book by themselves. Hence, there is often dishonesty among students in filling out attendance and activity journals, which can be caused by a lack of knowledge about the procedures for filling out attendance and activity journals, as well as insufficient motivation and supervision from teachers and educational institutions.

Recent observations and interviews have revealed that the monitoring system used for internship at SMK still lacks variety and relies heavily on conventional methods such as manual notes and physical reports. Despite the fact that almost all students are familiar with technology due to their habit of using smartphones, this presents a significant opportunity for the integration of more advanced monitoring systems, such as interactive mobile applications, web-based platforms, and cloud-based technologies that can redefine the way students report and access internship data. The integration of such technology is not only relevant but also highly potential in enhancing the effectiveness of monitoring, allowing students to document their internship activities in a more dynamic and organized manner. Furthermore, from the perspective of the internship supervisor, combining this system with a digital approach that prioritizes student engagement in reporting and monitoring the progress of their internship, can create a more immersive and engaging experience. This will enrich the reporting method, support the development of critical and analytical skills in students, and enable them to carry out internship more effectively. With an integrated monitoring system that utilizes information and communication technology (ICT), I can more easily monitor the progress of students, provide real-time feedback, and ensure that the objectives of internship are met more effectively.

Considering this situation, there is a great opportunity to develop a monitoring system software for vocational high school students' internship program. By utilizing interactive mobile applications, web-based platforms, and cloud technology, this monitoring system can enhance the effectiveness of reporting and supervision. The integration of this technology allows students to document their internship activities more dynamically and organized. For supervising teachers, this system will facilitate monitoring students' progress, providing real-time feedback, and ensuring better achievement of internship goals. As known, the main focus at this stage is on designing the structure, system design, and user interface. This stage transforms the system requirements identified in the analysis stage into designs that can be developed in the next stage. The result of the design stage is the Entity

Relationship Diagram (ERD), a structured model to depict the network and data relationships. The resulting ERD can be seen in Figure 2.

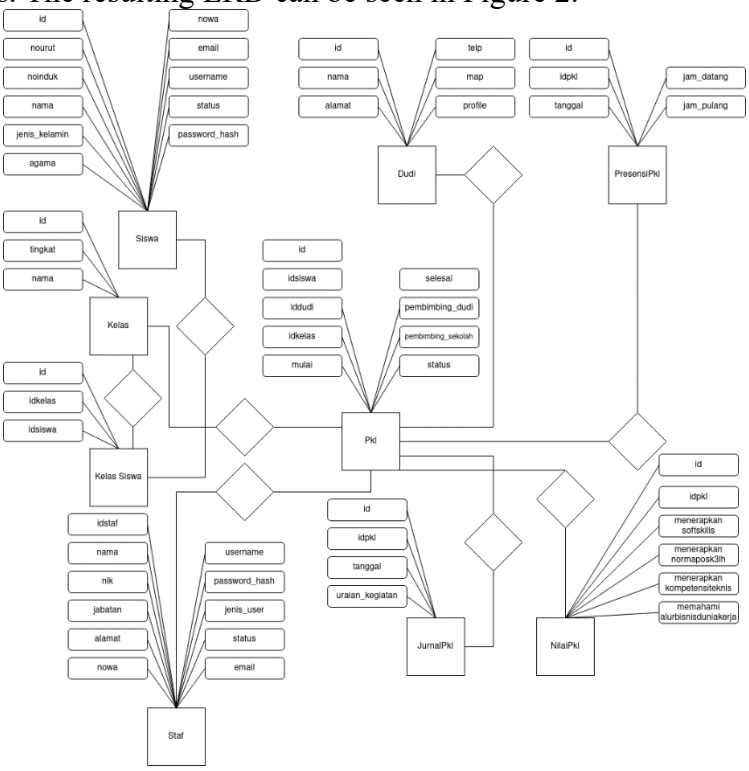

Figure 2. *Entity Relationship Diagram* (ERD)

After constructing the system design and relationship, the next step is the development phase. During this phase, the software system for monitoring internship for high school students is developed. This phase begins with preparing various materials required, not only in the form of narrative text but also in the form of videos, graphics, and daily journals written by students as a means of controlling their activities. The Figure 3 is an illustration of the product of the software system for monitoring internship that has been developed.

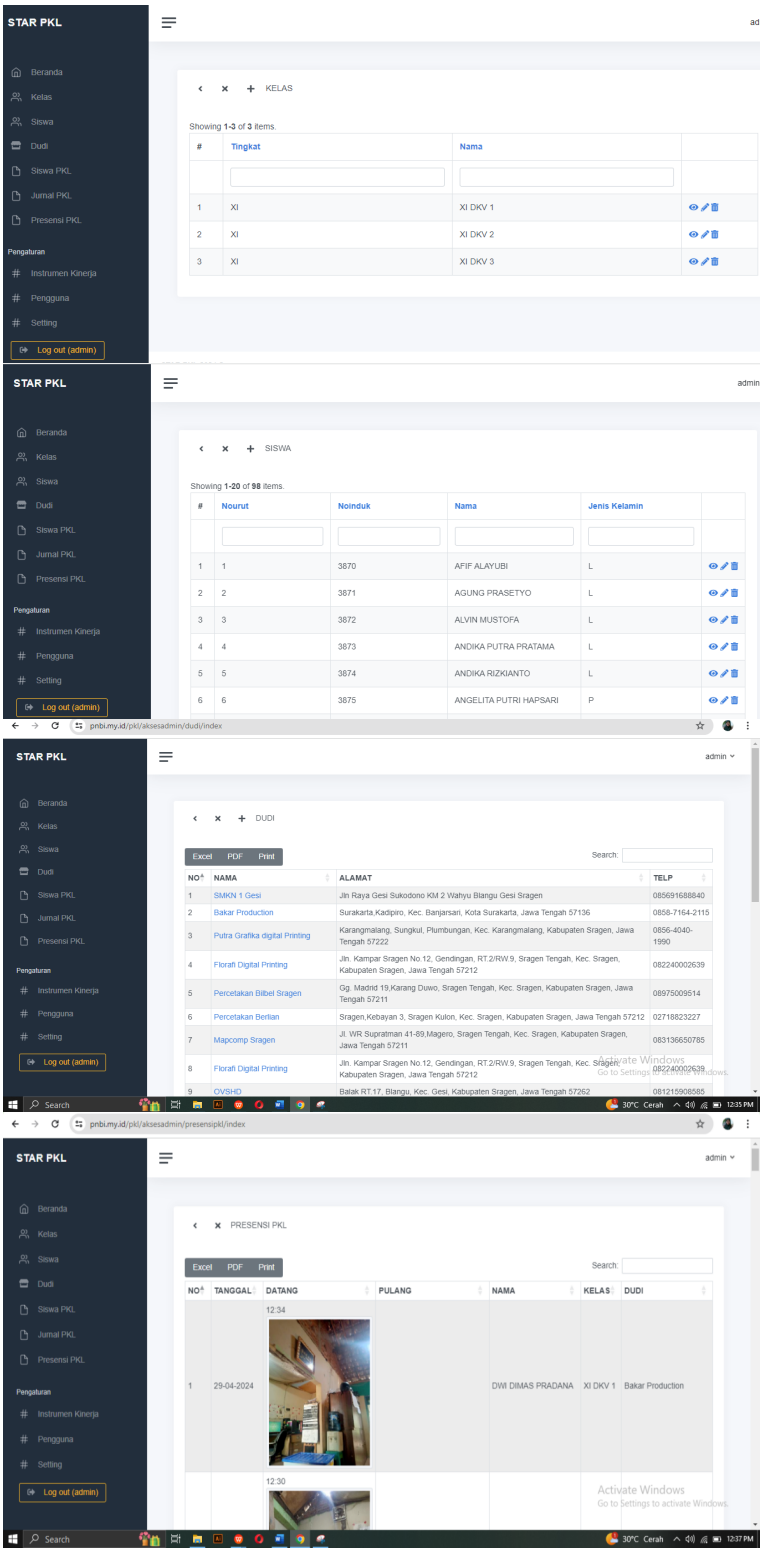

Figure 3. Software Products for the Internship Monitoring System for Vocational School Students

The internship monitoring system software was then tested by experts and practitioners through an alpha test. The results of the validation carried out by these

experts are explained in the table 5.

Table 5. Alpha Test Results

No	Validator	Average Validation Results (%)	Qualification	Decision
1.	Software I / Media I Expert	95%	Very Good	Very Eligible
2.	Software Expert II / Media II	91%	Very Good	
3.	Material Expert I	94%	Very Good	
4.	Vocational School teacher I	97%	Very Good	Very Eligible
5.	Vocational School teacher II	94%	Very Good	Very Eligible
6.	Vocational School teacher III	91%	Very Good	
Average Total Alpha Test Results		94%	Very Good	Very Eligible

The validation or alpha test results for the product system monitoring the internship activities of vocational high school students indicate excellent outcomes. The alpha test conducted by experts and practitioners evaluates the quality and feasibility of the system. Software Expert I gave a rating of 95%, Software Expert II gave a rating of 91%, and Material Expert I gave a rating of 94%, all with the qualification "Very Good" and the decision "Very Eligible" for two of the three experts. Meanwhile, Vocational High School Teacher I gave a rating of 97%, Vocational High School Teacher II gave a rating of 94%, and Vocational High School Teacher III gave a rating of 91%, all with the qualification "Very Good" and the decision "Very Eligible" for one of the three teachers. The average total alpha test result is 94%, with the qualification "Very Good" and the decision "Very Eligible," indicating that the product system for monitoring the internship activities of vocational high school students is excellent and suitable for supporting internship activities.

Based on the analysis of needs and assessments from experts and vocational high school teachers, it can be concluded that the software system for monitoring internship activities for vocational high school students that has been developed has been proven valid and suitable for supporting the internship activities of students. This system is suitable for several reasons. First, the monitoring system is unique and innovative because there is no specific system used for the internship process of vocational high school students, especially for daily reporting. Second, the system is compatible with various technologies, including websites, laptops, and Android. Third, the system was developed based on the analysis of needs, making it a solution to the practical problems of vocational high school students, facilitating students in collecting internship activity reports, and helping teachers in correcting the reports and students' work during internships.

The validation results or alpha testing for the internship monitoring system indicate excellent outcomes. System and material experts assess that this monitoring system falls within the category of being suitable and effective. The validator argues that an interactive monitoring system is capable of enhancing

student engagement and responsibility during the internship. This is in line with research showing that the use of interactive technology in monitoring can improve student motivation and accuracy of reports (Azis et al., 2020). Therefore, this system is not only suitable for use but also reliable in monitoring internship activities in real-time.

The development of this internship monitoring system is carried out by considering the needs of users, both students and supervising teachers. As stated by Bestin et al. (2023), a system designed based on user needs can improve the effectiveness and efficiency of reporting and monitoring activities. With user-friendly reporting features, students feel more motivated to fill in their daily journals honestly.

One of the advantages of the internship monitoring system is its ability to develop students' time management and responsibility skills. This system facilitates the supervising teacher's monitoring and evaluation of student performance more effectively and in real-time, which was previously difficult to achieve using manual methods (Ilmi et al., 2023). Additionally, field observations indicate that students are more accountable for reporting their activities, knowing that their reports will be regularly reviewed by their supervising teacher.

The integration of technology in the internship monitoring system allows for easy and flexible access for students and supervisors. This system can be accessed through mobile devices and web-based platforms, which facilitates students in reporting their activities at any time and from anywhere. According to research by (Scheiter, 2021; De Wet et al., 2016). The use of this technology provides convenience for supervisors to provide real-time feedback, which is highly valuable in the learning and skill development process (Ghosh et al., 2021).

The eligibility and quality of this internship monitoring system are carefully considered during the development process. In this study, these aspects have been carefully considered so that the system is deemed eligible and valid. The developers ensure that every feature in this system supports the needs of internship monitoring effectively (Sari Darti & Rahdiyanta, 2023). As expressed by Saputri et al. (2020) stating that every product, whether software or hardware, to be used for learning activities, must meet certain criteria to be considered eligible and valid.

One of the key advantages of this system monitoring internship lies not only in its integration with technology but also in its interactive features that support reporting and evaluation in real-time. The system is equipped with various components such as text, graphics, video, and daily journal writing that help students easily and accurately document their activities (Mindarti et al., 2022; Sitanggang, 2020). The system also motivates students to learn more diligently and report their activities more effectively (Nahriana & Arfandi, 2020)

The study conducted by (Febriani et al., 2022) aims to design a web-based internship monitoring information system at SMK Negeri 1 Sintuk Toboh Gadang. The implementation of this system allows for more effective monitoring, evaluation, and assessment of student internship activities. Furthermore, the research by (Pitriyana et al., 2024) on the design of a web-based internship management information system at SMK Negeri 1 Bungo also contributes to understanding the importance of structured and systematic training in meeting the needs of skilled labor in various fields. As it is known, the evaluation of student

internship reports in Vocational High Schools (SMK) is a crucial stage to ensure that students have achieved the expected learning objectives during internship. Another study by (Haryani & Sunarto, 2021) emphasizes the importance of evaluating internship programs by analyzing implementation management, program effectiveness, as well as supporting and inhibiting factors. Additionally, (Ilmi et al., 2023) highlight the importance of monitoring and evaluating students during internship to ensure the alignment of activities with the established curriculum.

Evaluating students' internship reports is crucial for identifying their achievements during internship, as emphasized by (Yondri et al., 2020) and (Rebia et al., 2023) that said the use of appropriate evaluation methods, such as mid-semester or end-of-semester exams, is effective in assessing student learning. A comprehensive and appropriate evaluation of internship student reports can ensure the achievement of learning objectives and prepare students for the world of work.

Research on monitoring student fieldwork practice in SMK using ICT highlights the relevance of relevant research on the system. The designed information system can help schools in mapping industrial work practice locations, facilitate students in obtaining information about internship, and improve the effectiveness of monitoring, evaluation, and assessment of internship student activities (Suwandi et al., 2022; Ohara et al., 2020). Thus, this research provides a basis for the development of more effective education strategies and policies in the future to improve vocational education quality in Indonesia, especially in preparing SMK students for the world of work.

However, it is important to acknowledge the limitations of this study. The main focus of this research is on product development and assessing the feasibility of the system through alpha testing, without reaching the stage of testing its effectiveness and impact on improving students' skills, time management, and overall creativity levels. Nevertheless, the implications of this research suggest that the developed internship monitoring system has great potential to help students develop important management skills and responsibilities (Soenarto et al., 2020). Further research is needed to evaluate the effectiveness of this system in the long term and how it can be further integrated into the educational process in vocational schools. With the implementation of this monitoring system, it is hoped that students can become more independent and responsible in carrying out their internships, while mentor teachers can provide more timely and accurate guidance and evaluation.

CONCLUSION

Based on the findings presented and the problems addressed, it can be concluded that this research and development effort has successfully created a software in the form of an information system for monitoring internship for vocational high school students. The feasibility of this product is highly dependent on the support of various components in the interactive and dynamic design of the information system. In the future, it is hoped that this product will make a significant contribution in facilitating and optimizing internship reporting activities

for students. Additionally, it is recommended that further research use this information system as a basis for testing its effectiveness and impact on various skills and competencies required by vocational high school students.

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