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Research Article

Analysis of the Use of Jobsheets and Demonstration Methods in Informatics Subjects at SMK Negeri 2 Pengasih

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Abstract
This study examines the implementation of the demonstration method and the use of jobsheets in enhancing student comprehension in the subject of Informatics at SMK Negeri 2 Pengasih. A quantitative approach with a descriptive method was employed, using data collected from questionnaires and task completion analysis. The results indicate that most students found jobsheets and teacher-led demonstrations helpful in understanding the learning topics. Furthermore, the task completion results show that all students achieved scores above the established Minimum Competency Criteria (KKM). However, a few students were close to the KKM threshold, indicating a need for additional guidance. Overall, the combination of jobsheets and demonstrations proved to be an effective approach for improving student comprehension and accommodating diverse learning styles. Hence, more focus should be given to students who are close to meeting the minimum competency requirements by offering extra support to help them fully understand. In addition, a variety of teaching methods that are more interactive and in accordance with student needs can further improve learning outcomes.

Keywords: Demonstration, Jobsheet, Informatics, Student Comprehension

1. Introduction

According to Djamaluddin & Wardana (2019), learning is the interaction process between students and teachers and learning resources in an educational environment. In this context, learning acts as support provided by educators so that students can gain knowledge, master skills and behaviors, and form attitudes and beliefs. In line with this opinion, Setyosari (2014) adds that effective learning is related to various aspects of learning and the teacher's ability to design learning experiences to achieve the desired learning outcomes. Therefore, to realize this, every student must be actively involved in learning activities. In addition, so that learning activities run smoothly, one way is to make the learning atmosphere comfortable (Nasir & Jaya, 2020).

Furthermore, education should be well managed, and this can be achieved if learners can (Sundgren et al., 2023)complete their education on time with good learning outcomes. In addition, various factors affect individual learning outcomes (Flynn & Castleberry, 2023), and one of the significant external factors is the presence of professional teachers . Thus, teachers who can manage learning using the right method will make it easier for students to understand the material (Azzizah et al., 2022), so they can achieve better learning outcomes (Sutikno, 2019).

In this case, Helmiati (2012) states that learning models discuss various ways to teach students with a variety of variations, so that they avoid boredom and create a comfortable and pleasant learning

atmosphere. Effective and efficient learning activities can be created with learning media that are appropriate to the needs, so that students can absorb the material delivered by the teacher optimally (Sapriyah, 2019). Finally, learning media, both physical and digital, play a major role in conveying information effectively to facilitate understanding and retention of concepts.

The demonstration method is a teaching method that conveys material by directly showing objects (Chen & Feng, 2023) or steps to demonstrate a certain process (Mulyati, 2021). Demonstrations can be applied to all subjects. In its implementation, the teacher must ensure that all students can pay attention and observe the object being demonstrated. Before the demonstration is carried out, the teacher needs to prepare the tools that will be used. Providing opportunities for students to find answers through their efforts and based on accurate facts, makes demonstration an effective method (Husain & Wardana, 2021).

Jobsheet is a worksheet designed so that students can learn independently, either with teacher guidance or independently. Jobsheet is a practical work guide presented in the form of sheets, including practicum objectives and practicum assignments (Putrama et al., 2020), which aims to enable students to learn independently without relying on teacher guidance (Fadhilah Makunti & Widjanarko, 2019), so that it becomes a student's guide during practicum (Nurhasanah et al., 2017). There are two categories of jobsheets, namely jobsheets for students and jobsheets for teachers/mentors. Jobsheets for teachers serve as guidelines in providing direction and guidance to students during the practicum process in the workshop. Meanwhile, jobsheets for students contain instructions that allow students to understand the steps, as well as prepare the necessary equipment and materials before carrying out practice in the workshop. The development of product-based jobsheets can meet the demands of learning, especially by paying attention to the characteristics of the learning process, especially in productive learning (Anshar, 2021). In addition, jobsheets can also act as an evaluation tool in the learning process, helping to measure student achievement (Wilujeng & Joko, 2021). However, in some cases, the use of jobsheets is not always effective without appropriate supporting methods, especially at the SMK level on complex practical materials. Therefore, the combination of jobsheets and demonstration methods is very important, especially in learning Informatics which requires in-depth technical understanding. The demonstration method allows students to directly see the application of the concepts taught, thus strengthening their understanding.

2. Methods

This research uses a quantitative approach with descriptive methods. A scientific approach that utilizes quantitative techniques or procedures systematically is known as quantitative methods (Sitepu & Sebayang, 2019). Descriptive method is an approach that aims to present a description or description of certain phenomena objectively (Purba & Simanjuntak, 2012). Quantitative descriptive is an approach used to analyze, summarize, and describe quantitative data through statistical analysis (Sudirman et al., 2023). Data were collected through questionnaires and task completion analysis. Questionnaires were given to students to measure their perceptions of the effectiveness of using jobsheets and demonstration methods in understanding the material. The task completeness was analyzed based on the results of the tasks given, which were measured using the Minimum Completeness Criteria (KKM) of 75. The data from these three methods were analyzed to evaluate whether the two methods were effective in improving student understanding. The research was conducted at SMKN 2 Pengasih in September 2024. The research objects were some of the X TJKT 1 and X TO 3 classes, with the number of correspondents ranging from 36 students.

3. Results and Discussion

This study aims to analyze the effectiveness of using jobsheets and demonstration methods in improving student understanding in Informatics subjects at SMKN 2 Pengasih. Based on data collected through questionnaires, observations, and analysis of task completeness, the results of this study are as follows:

3.1. Questionnaire Results

Questionnaires were given to 32 students from classes X TKJ 2 and X TO 3 who were also learning about informatics to measure their perceptions of the use of jobsheets and demonstration methods. The results of the questionnaire analysis of the use of jobsheets can be seen in the graph below.

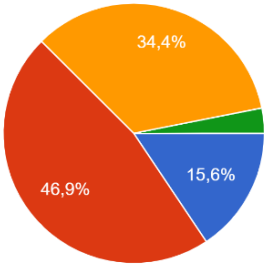

Figure 1. The results of the questionnaire on the perception of students' understanding after reading the jobsheet

The graph above displays the results of the questionnaire regarding students' perceptions of their understanding after reading and following the steps in the jobsheet. From 32 respondents, the following results were obtained:

a) 15.6% of students strongly agreed that they understood the material better when reading and following the steps in the jobsheet.
b) 46.9% of students agreed, indicating that most students felt that the jobsheet helped them in understanding the subject matter.
c) 34.4% of students chose neutral, indicating that they did not have a strong opinion regarding the effectiveness of the jobsheet in improving their understanding.
d) 3.1% of students (marked in green) disagreed, which means they felt that the jobsheet was less helpful in understanding the material.
e) No students chose strongly disagree, indicating that there was no strong rejection of the effectiveness of using the jobsheet.

This result shows that the majority of students, 62.5% (a combination of agreeing and strongly agreeing), felt that the jobsheet had a positive influence on their understanding. However, some students felt neutral, which could be due to their preference for other learning methods such as direct demonstration or any method, as long as it is delivered well, it will be accepted by them. Then on the second questionnaire question with the results can be seen in the following figure:

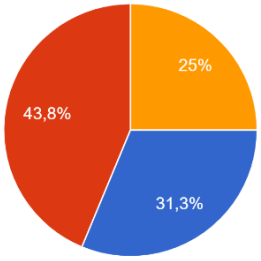

Figure 2. Student questionnaire results about the level of understanding after working on the jobsheet

The graph above displays students' responses regarding their level of understanding of the material after working on the jobsheet. From 32 respondents, the results are as follows:

a) 31.3% of students strongly agreed that they understood the material better after working on the jobsheet. This shows that a third of the students felt that the jobsheet played a significant role in helping them understand the material in depth.

b) 43.8% of students agreed that they understood the material better after working on the jobsheet. Most students felt that the jobsheets were effective in improving their understanding.

c) 25% of students chose neutral, which means they did not feel a significant difference in their understanding of the material after working on the jobsheet.

From these results, it can be concluded that around 75% of students (a mix of strongly agree and agree) felt that the jobsheet had a positive influence on their understanding. Although there were 25% of students who felt neutral, these results indicate that the use of jobsheets as a learning tool can be maintained, but may need to be supplemented or supported with other methods, such as demonstrations, to accommodate students' various learning styles. For the demonstration method, the results of the questionnaire are as follows:

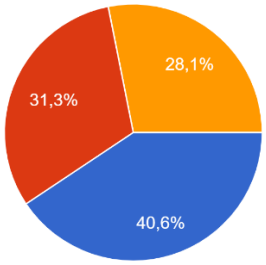

Figure 3. Questionnaire on the effectiveness of using the demonstration method

Based on the pie chart above, the following is an analysis of the survey results from 32 respondents:

a. 40.6% of respondents strongly agreed that they understood the jobsheet more easily after the teacher gave a demonstration. This indicates that most students felt that the demonstration by the teacher helped them better understand the material provided in the jobsheet.

b. 31.3% of respondents agreed that the teacher's demonstration made it easier for them to understand the jobsheet. This indicates that more than 70% of students (a combination of strongly agree and agree) felt helped by the visual explanation and direct steps from the teacher.

c. 28.1% of respondents were neutral, which means they did not have a clear or strong opinion regarding the importance of the teacher's demonstration in understanding the jobsheet. Perhaps they could follow the jobsheet well either with or without the help of the demonstration.

From this data, it can be concluded that most students found the teacher's demonstration very helpful in their understanding of the jobsheet, while a minority were neutral towards the approach.

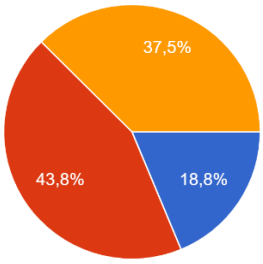

Figure 4. Students' preference for variations in the use of jobsheets and demonstrations

The figure above displays the results of the questionnaire regarding students' preferences in choosing their preferred learning method: reading and following the jobsheet independently, watching a demonstration by the teacher, or neutral. From 32 respondents, the following results were obtained:

a. 18.8% of students preferred to read and follow the jobsheet independently. This shows that there are a few students who feel comfortable learning independently with the jobsheet, as it gives them the opportunity to learn at their own pace.
b. 43.8% of students preferred to watch the demonstration by the teacher and follow the direct explanation. This indicates that most students find it more helpful with a more visual and interactive approach, where the teacher directly guides the steps to be followed.
c. 37.5% of students chose the neutral option, meaning they did not have a strong preference between the jobsheet or the demonstration. This shows that any learning method, if it is delivered well, is acceptable to them.

From the results above, a combination of using jobsheets and demonstration methods could be an ideal approach to learning, to cater for diverse learning preferences among students. It will also provide flexibility for teachers to adjust the method according to the needs of each student.

3.2. Task Completion Analysis

Student assignment completeness is measured based on the results of assignments given after learning sessions using jobsheets and demonstration methods. The Minimum Completion Criteria (KKM) used is 75. The following is a graph of the results of the X TKJ 2 and X TO 3 class assignments.

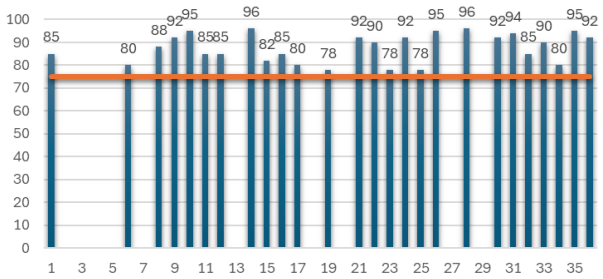

Figure 5. Grade distribution of jobsheet 1 class X TO3

Based on the Job 1 score distribution graph for class X TO 3, with a KKM set at 75, the majority of students have managed to achieve completeness. Of the several students who have submitted assignments, all of these students get scores above the KKM marked by above the orange line (KKM 75), with the highest score reaching 96. With an average assignment score for X TO 3 of 87.7. In general, the learning method using jobsheets and demonstrations was effective in helping most students

understand the material well. However, some students who are close to the KKM require further attention and guidance to ensure all students can achieve the expected learning completeness.

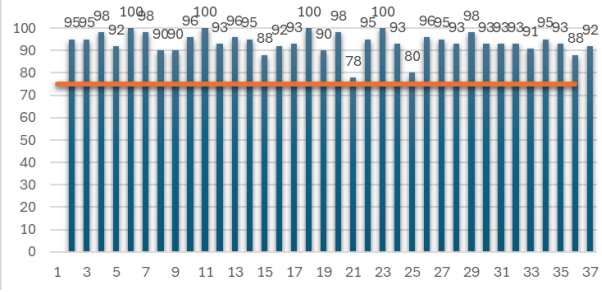

Figure 6. Grade distribution of jobsheet 2 class X TKJ 2

Based on the Job 1 score distribution graph for class X TKJ 2, with a KKM set at 75, all students have successfully achieved completeness. Of the several students who have submitted assignments, all of these students get scores above the KKM marked by above the orange line (KKM 75), with the highest score reaching up to 100. With an average overall assignment score for X TKJ 2 of 93.5. However, there are still students who have reached the KKM but are almost exactly touching the KKM, this requires further attention and guidance to ensure that all students can achieve the expected learning completeness.

4. Conclusion

Based on the results of the research and analysis conducted regarding the use of jobsheets and demonstration methods to enhance student understanding in Informatics subjects at SMK Negeri 2 Pengasih, several conclusions can be drawn. The combination of jobsheets and demonstrations proved effective in improving students' comprehension. This was evident from the questionnaire results, where more than 70% of students reported that the teacher's demonstration method helped them better understand the material presented in the jobsheet. Additionally, around 70% of students acknowledged the positive impact of jobsheets in enhancing their understanding. Assignment completion also showed favorable outcomes, as all students from the two observed classes achieved scores above the KKM, indicating the effectiveness of these learning methods in helping students grasp the material well.

However, the findings also highlight the need for further guidance for certain students. Although the majority achieved scores above the KKM, a few students were close to the KKM threshold, suggesting that additional attention is necessary to ensure all students achieve optimal understanding. Overall, the use of jobsheets and demonstration methods as a teaching approach at SMKN 2 Pengasih has proven to be effective in enhancing students' understanding of Informatics. This method also offers flexibility, allowing it to be tailored to students' learning preferences and needs.

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