The effect of practicum learning based audiovisual on students' learning outcomes in Indonesian vocational secondary school

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Article Info

ABSTRACT

This research aimed to examine the effectiveness of practicum learning based audiovisual in improving students' learning outcomes in vocational secondary schools. At the practical level, teachers play an important role in facilitating students by designing an appropriate method, media, and material of learning which represent the actual condition of workplaces. Thus, students can gain their learning skills and experiences. Quasi-experimental research was conducted in vocational secondary schools in Surakarta city, Indonesia. The research participants were 230 students categorized into the control group and the experimental group. The results showed the effectiveness of practicum learning based audiovisual in improving students' learning outcomes effectively. The effectiveness can be proved by the average pretest score and post-test score between the control group and the experimental group. Considering its effectiveness, practicum learning based audiovisual can be used as an advanced model of learning in vocational secondary school especially in preparing students before joining the industrial circle. This research has shown the effectiveness of practicum learning based audiovisual in improving students' learning outcomes in vocational secondary schools. It can be proved by the result of an independent t-test that shows significant differences in students' learning outcomes in the control group and experimental group. Based on the results of research, the model of practicum based audiovisual learning can become an advanced model of practicum learning in vocational secondary schools, especially in non-engineering and technic majors.

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1. INTRODUCTION

The main objective of vocational education in Indonesia is to produce skilled workers that meet the demands of the industrial circle. In pursuing this objective, the Indonesian government has a great responsibility to provide policies and regulations linking the direction of vocational education with the needs of jobs. At the practical level, teachers play an important role in facilitating students by designing an appropriate method, media, and material of learning which represent the actual condition of workplaces. Thus, students can gain their learning skills and experiences.

According to the Ministry of Education and Culture of Republic Indonesia [1], the vocational secondary school aims to prepare students to work at certain jobs. The learning process in vocational secondary schools is designed in different frameworks in compare with the secondary schools. Students in vocational secondary schools learn about theoretical and practical knowledge as the provision to join in the industrial circle [2]–[4]. Furthermore, in 2014, the Ministry of Education and Culture issued curriculum 2013 (K13) that consists of guidance to carry out the learning process. In the context of vocational secondary schools, the learning process tends to implement learning by doing concept and scientific approach. It means K13 provides a space for students in secondary vocational schools to practice their knowledge and gain more experiences in the workplace.

Based on that educational framework, the learning processes and learning materials in vocational secondary schools have to be linked and matched with the needs of industrial circles. Teachers play an important role in determining the quality of supervision. Meanwhile, students learn about theoretical knowledge and practices in the actual situation in the form of an internship program [5], [6]. Then, students practice theoretical knowledge in the actual situation in the form of internship programs. In preparing the students in the internship program, schools organize a practicum learning for students. The practicum learning is held in the school laboratory where students can do a simulation based on the actual condition of workplaces [3]. In non-engineering and technical vocational secondary schools, such as office administration major, the practicum usually held by role and play model of learning. One of the students act as a secretary, meanwhile, other students help playing the role. Teachers give guidance and observing students' performance. At least, by this model, students can get an artificial experience before they take an internship program.

The use of practicum learning based audiovisual can become an alternative model of learning in vocational secondary schools. Along with the rapid development of technology, the practicum learning can be used to enhance the quality of practicum learning. However, until today, practicum learning based audiovisual has yet to be broadly utilized in vocational secondary schools. Such media are tools that can help the teaching and learning process so that the meaning of the message delivered becomes clearer, and the purpose of education or learning can be achieved effectively and efficiently [7]–[9]. Based on this assumption, this research performs experimental research to implement practicum learning based audiovisual in office administration major. The experiment aims specifically to examine the effectiveness of practicum learning based audiovisual in improving students' learning outcomes.

Practicum learning is the method of teaching and learning based on the actual situation of workplaces. Students can learn practical knowledge and achieve field experiences during the practicum learning process. The objective of practicum learning is to link theory and practice in the actual situation of workplaces. Practicum learning can be posited as a pre-service training before students get jobs. It is aimed to minimize the gap between coursework and practices [10]. Practicum can be categorized into four models of practicum namely the apprenticeship practicum, academic practicum, growth or coursework practicum, and articulated practicum. Several aspects that should be considered in practicum learning such as the role of supervision, the learning goals and outcomes, and the length and structure of practicum [11].

Practicum learning based audiovisual can be defined as the model of practicum learning supported by audiovisual media. Theoretically, the method and media of learning play an essential role in determining students' success in achieving learning outcomes [12]–[14]. Technology and media can be posited as a tool to provide simulation for students so that the learning process takes place [15], [16]. Technological developments are becoming increasingly prevalent, providing educators with the chance to use digital media in their effort to support learning in the classroom [17]–[19]. Expectations of these technological advances require teachers, as professional educators, to be able to innovate in creating learning media that can support learners' understanding of the subject matter, both in theory and practice [20]. However, the effectiveness of technology and visualization has to be measured. It because the use of technology and visualization has to be aligned with the pedagogical approaches that are used in the classroom [21]. Moreover, teachers need to know how to effectively integrate learning media in the learning process [22].

Based on those theoretical frameworks, practicum learning based audiovisual means the use of audiovisual media to support practicum learning. The use of practicum learning based audiovisual is in line with the model practicum in vocational secondary schools. The model used in the vocational secondary schools in Indonesia is similar to the academic practicum where students focus to apply theoretical concepts from coursework into the actual situations. In this model, students need to know about many problems and circumstances that will be faced by students in workplaces. Therefore, technology becomes essential to support the practicum in this model of practicum. The audiovisual media presents the actual conditions in workplaces. Students can sense the climate of work in any circumstances. Thus, it can be supposed that practical-based audiovisual learning can improve students' learning outcomes.

2.   RESEARCH METHOD

This study employed a quasi-experimental research strategy involving a pretest-posttest control group design. Students were categorized into the control group and the experimental group. Practicum learning based audiovisual was implemented in the experimental group. Meanwhile, students in the control group used the conventional model. The effect of practicum learning based audiovisual was measured by an independent t-test with SPSS program.

2.1. Research participants

The population was students who majoring administrative office major in a vocational secondary school in Surakarta City, Indonesia. The sample of research were 230 students taken using the proportional random sampling technique. Respondents consist of 115 students in the control class and 115 in the experimental class.

2.2. Procedure and materials

Practicum learning based audiovisual was implemented in the archiving course. Students in the experimental group were supported by the audiovisual learning media. The audiovisual products used as learning media for practicum-based archiving courses in the experimental class were learning videos on Inward and Outward Letters & E-Archive based on the 2013 Curriculum. Audio-visual media archiving subjects are products of previous research and development [23]. The copyright has been registered at the Directorate General of Intellectual Property, entitled Learning Video on Inward and Outward Letters & E-Archive based on 2013 Curriculum. The audiovisual consists of dialog recording, narration audio, sound effect and instrument, hand property, set property, incoming mail video, and outgoing mail.

3.   RESULTS AND DISCUSSION

3.1. The result of pretest

The data obtained from the posttest and pretest were analyzed using SPSS 16. The analysis was focused to determine the distribution of data, the average value, and the standard deviation. The results of the analysis using the students' pretest data forms are shown in Tables 1 and 2. Table 1 shows the mean of the pretest score of the experimental group is 67.13 and the mean of the control group is 72. The control group and experimental group had the same number of participants with the score of the control group is superior to the experiment group. Furthermore, an independent t-test was conducted to analyze the difference between the control group and the experimental group. The result of the t-test of the pretest score is shown in Table 2.

Table 2 shows the values of Levene's test for equality of variances are 0.181, which means that the data variance between the experimental group and the control group is homogeneous. The value of equal variances assumed is 0.00, which means that H0 is rejected and Ha is accepted. Therefore, it can be concluded that there is a significant difference between the average learning outcomes of students in the experimental group and the control group. In terms of the pretest, the control group is superior to the experimental group.

Table 1. Experimental and control class pretest statistics

Class	N	Mean	Std. deviation	Std. error mean
Control class	115	72.00	7.545	.704
Experimental class	115	67.13	8.560	.798

Table 2. Pretest t-test results

Value	Levene's test for equality of variances		t-test for equality of means						
	F	Sig.	T	Df	Sig. (2-tailed)	Mean difference	Std. error difference	95% confidence interval of the difference Lower	Upper
Equal variances assumed	1.799	.181	4.576	228	.000	4.870	1.064	2.773	6.966
Equal variances not assumed			4.576	224.464	.000	4.870	1.064	2.773	6.966

3.2. Posttest results

The posttest data were obtained after the treatment in the experimental group. The experimental group was given treatment using audiovisual learning media. Meanwhile, the control group used the conventional model of practicum without using audiovisual learning media. Subsequently, students in both

groups were given a test in the form of posttest questions. The analysis of the posttest can be seen in Table 3. Table 3 reveals the mean of pretest in the experimental group is 85.35. Meanwhile, the mean of the control group is 78.74. This indicates that the control class may not have experienced a significant increase in learning outcomes. That the score of the learning outcomes in the experimental group, which were given treatment, become superior to the control group. To prove the differences, an independent t-test was conducted on the posttest data to find the significance value. The results of the t-test are presented in Table 4.

Table 3. Experimental and control class posttest statistics

Class	N	Mean	Std. deviation	Std. error mean
Control group	115	78.74	8.373	.781
Experimental group	115	85.35	7.744	.722

Table 4. Posttest t-test results

Value	Levene's test for equality of variances		t-test for equality of means						
	F	Sig.	T	Df	Sig. (2-tailed)	Mean difference	Std. error difference	95% confidence interval of the difference	
								Lower	Upper
Equal variances assumed	1.019	.314	-6.214	228	.000	-6.609	1.064	-8.704	-4.513
Equal variances not assumed			-6.214	226.622	.000	-6.609	1.064	-8.704	-4.513

Table 4 shows the sig. Levene's test for equality of variances is 0.314. This means the data variance between the experimental group and the control group is homogeneous. The value of equal variances assumed with sig. (2-tailed) of 0.00 shows that H0 is rejected and Ha is accepted. Therefore, it can be stated that there is a significant difference between the average learning outcomes of students in the experimental group and the control group. This means that practicum learning based audiovisual can improve students learning outcomes in the experimental group.

There is a standard to determine the effectiveness of practicum learning based audiovisual, which is if the percentage level of students' completeness is greater than or equal to 85%, it can be declared effective, whereas if it does not reach the specified percentage, it can be concluded that the practicum learning based audiovisual is not effective in improving students' learning outcomes. Based on the analysis of the data, the percentage of students' completeness of the experimental group is 92%, which is greater than 85%. Based on the results obtained, the use of practicum learning based audiovisual is effective in improving students' learning outcomes.

3.3. Discussion

The instrument used in collecting data on the effectiveness of the media was a test. The test was conducted to collect data on student learning outcomes, through a pre-test at the beginning of the learning process, and a post-test in the final learning process, after implementing the audiovisual practical learning-based archiving learning media. The test comprised multiple-choice test questions, with a total of 30 items, and compared the learning outcomes of students before and after implementing the learning media, using an independent t-test.

The results of the research show the effectiveness of practicum learning based audiovisual in improving students' learning outcomes. The audiovisual helps students to experience the actual situation of workplaces by simulating several cases that have to solved by students. It means that the model of practicum can be posited as a learning simulator [15], [16]. To practices the learning materials, there is no need to present a real one, as it can be replaced by one that can represent its actual situation [23]–[25]. Thus, practicum learning based audiovisual can be used to prepare students for the actual situation of workplaces.

Practicum learning based audiovisual becomes more effective than conventional learning media in improving students' learning outcomes. This is in line with previous studies [13], [26] that mentioned the effectiveness of the media of learning. The audiovisual is the best medium that can be used to make learning effective [8], [15], [20], [27], [28]. Practicum learning based audiovisual also helps students to master a specific skill [8], [9], [16], [25], [27], [29], such as archiving skills in office administration. It means the practicum learning based audiovisual can improve students' learning outcomes and skills.

This research has shown the positive impact of the use of media and technology. The use of technology appears to be consistent with the needs and demands of the industry today. The audiovisual brings visualization of the actual situation in workplaces that creates a different type of learning environment. The learning environment contributes to creating students' conception of learning [30]. Practicum learning

based audiovisual can represent the situation of workplaces in any circumstances. The practicum learning based audiovisual can be a medium to prepare students before they join in industrial circles. The implementation of practicum learning based audiovisual can become an advanced model of practicum learning, especially in non-engineering and technical vocational secondary schools [20], [31]. Practicum learning based audiovisual can be defined as the use of audiovisual learning to create an artificial condition of workplaces during practicum learning. Visualization of an office can improve the climate of working in practicum learning. It is highly recommended that educators or teachers obtain audiovisual media from trusted sources for use in the learning process to ensure that they have a positive impact on students.

4. CONCLUSION

This research has shown the effectiveness of practicum learning based audiovisual in improving students' learning outcomes in vocational secondary schools. It can be proved by the result of an independent t-test that shows significant differences in students' learning outcomes in the control group and experimental group. Based on the results of research, the model of practicum based audiovisual learning can become an advanced model of practicum learning in vocational secondary schools, especially in non-engineering and technic majors. The use of audiovisual learning can help students to get experiences based on the actual situation of workplaces. This becomes very essential for students before they joining in the industrial circle. Besides its effectiveness, another aspect of practicum learning based audiovisual such as the negative impact on students' social skills and character building should be examined in further research. The use of audiovisual, perhaps, can enhance the practical experience of students but it can be less powerful to shape students' social and character constructed by social communication and interaction. Despite this limitation, the use of audiovisual media in practicum learning should be considered by teachers and schools as advanced media to prepare students for the jobs.

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