Student Learning Outcomes Using Drill And Practice Type Of Computer Assisted Instruction

Muhamad Arpan, Salaman, Ridho Dedy Arief Budiman, Ambyar, Wakhinuddin

Abstract— The study aims to determine the effect of the Drill and Practice type of Computer Assisted Instruction model on student learning outcomes. The research method uses experiments with a quasi-experimental form and Nonequivalent Control Group Design. The population of the study was all class XI SMK of the Multimedia Department. Using purposive sampling techniques, the sample of the study was class XI B as an experimental class and class XI A as a control class. Data collection techniques used measurements and data collection tools used tests. Data analysis techniques used the T-test. The result of the study showed that the Drill and Practice type of Computer Assisted Instruction model affected the student learning outcomes.

Index Terms— Computer Asissted Instruction, Drill and Practice, Learning Outcomes.

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1   INTRODUCTION

The world of education is a fundamental thing related to the formation of the quality of human resources. Through education, humans are educated to be able to know all things related to science and technology. The science and technology aims to create quality human resources [1]. In this regard, science and technology in the globalization era greatly affect the science of education. Along with the development of science and technology, the most fundamental thing that must be included in its development is something related to the quality of its own human resources, because it is the most fundamental and influential especially in the world of education [2].Education is a conscious and planned effort to create an atmosphere of learning and learning process so that students actively develop their potential to have spiritual spiritual strength, self-control, personality, intelligence, noble character, and the skills needed by themselves, society, nation, and country [3]. Education is the reconstruction or reorganization of experiences that add meaning to experience, and which adds to the ability to direct subsequent experiences [4]. Simply put, the notion of education is a learning process for students to be able to understand, understand, and make humans more critical in thinking.

Based on the results of the researcher's observations at SMK Negeri 1 Sengah Temila, Landak Regency there are obstacles that occur including the role of students still focused on the teacher in the classroom, even though the teacher has tried to use learning media such as powerpoint devices when the learning process takes place but there is still a lack of activity and involvement the student. Then the facilities available at Sengah Temila State Vocational School 1 namely in the multimedia department there are a Computer Laboratory along with a computer device totaling 27 units, but these facilities are less effective in use because the subject matter teacher is more dominant in the class carrying out teaching and learning activities using applied learning methods to students namely

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question and answer lecture and assignment methods, discussion and assignment lecture methods, and demonstration and practice lecture methods. The use of learning models that are less effective in the material taught causes monotonous and even boring learning. To overcome these problems, we need a solution that is the existence of innovation and the use of good learning models. Learning model is a plan or pattern that can be used to form plans, design materials, and as a guide for learning. Innovation and the use of good learning models in a learning activity are inseparable, especially when a teacher teaches in class, because the use of appropriate learning models can help students to understand learning material so that learning outcomes can be achieved. One learning model that can be used as an alternative to provide variety and can be a motivation for student learning in the learning process is a computer-assisted teaching model or Computer Assisted Instruction (CAI) learning. The CAI learning model is a system of teaching and learning with computer-aided assistance and CAI is the development of information technology, namely communication (interactive), audio, video, images, which are packaged as multimedia technology. The computer assisted teaching model or CAI has several types, namely: drill and practice type, tutorial, simulation, and type of game (game). Of the several types of computer-aided learning, researchers use the type of drill and practice. Drill and practice is a computer-based teaching method that is done by providing repetitive practice, the aim is that students can be more skilled, fast, and precise in doing a skill. Drill is imposition of repetitions through which habits are built up, then practices are not learned until the pupils 'responses to his cues are automatic, until he can do them in his sleep' as it is revealingly put "and drill dispenses with intelligence as skills and competencies are generally 'developed through practice, through repeated trials and performance. In essence, his argument is that by drill, facilities are routinizable, becoming increasingly automatic as they are developed [5]. The results of previous studies indicate that there is an influence of the use of Computer Assisted Instruction (CAI) learning media on student learning outcomes [6], [7], [8], [9], [10], [11], [12], [13], [14], [15], [16]. Based on the background and the results of previous studies, researchers conducted research on student learning outcomes using the Computer Assisted Instruction type Drill and Practice model.

2   METHOD

The method to be used in research is experimentation. The experimental method was chosen because it was in

TABLE 4
HOMOGENITY TEST RESULTS

Test	F	df1	df2	Sig.
Pretest	0.374	1	60	0.543
Posttest	0.097	1	60	0.756

accordance with the research to be carried out in the classroom (laboratory) and the existence of treatment, namely the learning model of computer assisted instruction type of drill and practice on the material Using E-mail in Class XI of SMK Negeri 1 Sengah Temila, Landak District. The form of research used in research is Quasi Experimental Design. Quasi-experimental design is used because in reality it is difficult to get a control group used for research. The research design used in the study is Nonequivalent Control Group Design. This design was neither the experimental group nor the control group randomly selected.

The population in this study were all students of class XI of SMK Negeri 1 Sengah Temila Department of Multimedia in the odd semester of the academic year 2017/2018 consisting of three classes, namely class XI A Multimedia, XI B Multimedia, and XI C Multimedia totaling 101 students. Sampling in research using purposive sampling techniques. In these considerations with the results of the pre-observation conducted at SMK Negeri 1 Sengah Temila, Landak Regency and with information obtained from KKPI field study teachers revealed that the grade XI B Multimedia was relatively low in achievement, while the grade XI A Multimedia was relatively high in its KKM achievement value on the material Using E-mail, the research sample is determined; XI B Multimedia class as an experimental class and XI A Multimedia class as a control class. Data collection techniques used in the study are measurement techniques. Data collection tool used in research is a test of learning outcomes. The data analysis technique used is the T test with prior tests of normality and homogeneity beforehand.

3   RESULT AND DISCUSSION
3.1 Data Description
The results of the test are given to students and then corrected according to the scoring guidelines. Calculation of the pretest and posttest scores for the control class in Table 1. Calculation of the pretest and posttest scores for the experimental class in Table 2.

3.2 Normality Test
Data normality test aims to test whether the research data has a normal distribution or not. The technique used to test the

normality of pretest and posttest data is the Kolmogorov-

Based on Table 4, the significance value of pretest and posttest is greater than 0.05. Based on decision making criteria, the pretest and posttest homogeneity test data results are derived from homogeneous variance.

TABLE 1
THE RESULT OF PRETEST AND POSTTEST OF CONTROL CLASS

Details	Pretest	Posttest
N Valid	30	30
N Missing	0	0
Mean	54.63	68.13
Median	53.00	68.50
Mode	53	77
Std. Deviation	9.711	7.691
Variance	94.309	59.154
Minimum	40	50
Maximum	75	80

Smirnov test with the help of SPSS version 16 for Windows

TABLE 2
THE RESULT OF PRETEST AND POSTTEST OF EXPERIMENTAL CLASS

Details	Pretest	Posttest
N Valid	32	32
N Missing	0	0
Mean	63.94	80.97
Median	65.00	8.00
Mode	77	80
Std. Deviation	9.971	8.649
Variance	99.415	74.805
Minimum	43	63
Maximum	80	97

TABLE 3
NORMALITY TEST RESULTS

Test	Class	Kolmogorov-Smirnov		
		Statistic	df	Sig.
Pretest	Control	0.104	30	0.200
	Experimental	0.124	32	0.200
Posttest	Control	0.137	30	0.160
	Experimental	0.136	32	0.142

with a significance level 0.05. Normality test results in Table 3. Based on Table 3, the significance value of the data for the control and experimental posttest classes is greater than 0.05. Based on decision making criteria, the pretest and posttest normality test data from the population are normally distributed.

3.3 Homogeneity Test
Homogeneity test is done to find out whether the data or sample taken is from a homogeneous variance or not by comparing the data between the control and experimental classes. Homogeneity test results are in Table 4.

3.4 T-Test
T-test can be done because the data is normally distributed and homogeneous. T test results in Table 5.

TABLE 5
T-Test Results

Test		Levene's Test for Equality of Variances		T-Test for Equality of Means						
		F	Sig.	T	Df	Sig. (2-tailed)	Mean Diffe-rence	Std. Error Diffe-rence	95% Confidence Interval of the Difference	
									Lower	Upper
Pretest	Equal Variances Assumed	.37	.54	-3.72	60	.00	-9.30	2.50	-14.31	-4.30
	Equal Variances Not Assumed			-3.72	59.91	.00	-9.30	2.50	-14.31	-4.30
Posttest	Equal Variances Assumed	.10	.76	-6.16	60	.00	-12.84	2.08	-17.00	-8.67
	Equal Variances Not Assumed			-6.18	59.84	.00	-12.84	2.08	-16.99	-8.68

Based on Table 5, obtained a significance value < 0.05, then there is an influence before and after conventional learning and computer assisted instruction type drill and practice on the learning outcomes of class XI students of SMK Negeri 1 Sengah Temila, Landak Regency on the material Using E-mail. Some research that has been carried out also shows that the model of computer assisted instruction type of drill and practice has an effect on student learning outcomes [17], [18], [19].

4 CONCLUSION

Based on the Result and Discussion, it was concluded that the Drill and Practice type of Computer Assisted Instruction model affects the learning outcomes of class XI students of SMK Negeri 1 Sengah Temila, Landak Regency on the material Using E-mail.

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