HASIL CEK_5. Effectivenessof Information Technology

by Muchlas Dosen Uad

Effectiveness of Information Technology (IT) Classroom Learning on Motivation and Careers Students of Junior High School

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ARTICLE INFO	ABSTRACT (10PT)

The purpose of this research is to analyze the level of effectiveness of the information technology-based learning process for increasing students' learning motivation and careers at SMP Muhammadiyah 2 Cilacap and to analyze the differences in the results of the learning process between information technology classes and regular classes.

The research activity was carried out using a quantitative descriptive method with a total of 76 subjects. Data collection related to the above objectives used a questionnaire. The data that has been collected is then analyzed using a real difference test, namely the independent sample t-test.

The results showed an increase in the effectiveness of the learning process and the growth of learning motivation in students. However, about careers and insight into students' careers. The results showed that the insight into the careers of the students of SMP Muhammadiyah 2 Cilacap was not optimal. Then the learning outcomes shown also experienced differences between the information technology class and the regular class.

Introduction

The development of technology in the world of education is a must, especially in the current modern era, plus the Covid-19 pandemic which requires the face-to-face teaching and learning process to be abolished and replaced with online learning. With these changes, SMP Muhammadiyah 2 Cilacap opened a special class, namely the Information Technology (IT) class, where the entire teaching and learning process is based on multimedia. The aim is that there is an effective teaching and learning process between teachers and students which is then expected to have an effect on learning motivation and career development of students at SMP Muhammadiyah 2 Cilacap.

Multimedia devices such as computers, laptops, monitors, speakers, projectors, scanners, webcams and so on play an important role in the learning process in IT classrooms. However, in reality not all schools are able to provide adequate multimedia equipment due to budget constraints, difficulty in accessing the network to school locations, and limited human resources.

The results of the observations carried out showed that in the learning process in the IT class there were still obstacles such as: (1) students tended to open game applications, (2) the teacher made material on blogs, (3) the students' lack of enthusiasm in participating in class learning. The hypothesis formulated for the effectiveness variable in this study is:

H_0 There is no effect of effectiveness in the learning process in the IT class

H_a There is an effect of effectiveness in the learning process in the IT classroom

Learning motivation is an impulse that exists in a person's personal self or can also come from outside in giving an influence on learning outcomes, where learning motivation increases, learning outcomes will also increase, and otherwise (Cahyani et al., 2017), where the lack of motivation to learn makes students less interested in learning, is the cause of a lack of self-confidence and considers themselves not smart (Nurcahya, 2018). Indicators of students having learning motivation are characterized by the following behaviors: a) diligently working on assignments, b) tenacious or not quickly discouraged), c) showing interest in various adult problems, d) preferring to work independently, e) being able to defend their opinions (Suharni et al., 2018). The existence of an IT class that provides convenience and makes the learning process more interesting and can foster student learning motivation for the better. The hypothesis formulated for the motivation variable in this study is:

H_0 There is no influence of students' learning motivation in the learning process in the IT class

H_a There is an influence of students' learning motivation in the learning process in the IT class

The end of a level at the education level is the first step for students in determining future career choices. Likewise, at the end of the junior high school level, where junior high school students will be faced with the choice of the next level of education, whether they choose to continue to high school, vocational school, or even choose to work because the family's economy is less able to

continue the next level of education. The existence of career insight development for students at SMP Muhammadiyah 2 Cilacap is expected to provide broader and better knowledge regarding career choices to be taken. So that students can prepare what skills and expertise must be possessed by or recognize well the talents and interests that exist in students so that they can be developed for the better. The hypotheses formulated for career variables in this study are:

H_0 There is no influence of students' career insight in the learning process in the IT class

H_a There is an influence of students' career insight in the learning process in the IT class

So it is hoped that the IT class in the learning process that takes place at SMP Muhammadiyah 2 Cilacap will not only have an impact on the effectiveness of the learning process, foster learning motivation, and develop career insights for students. However, it also shows differences in learning outcomes that are better than the learning process in regular classes where the ongoing learning process does not use multimedia devices. The hypothesis formulated for learning outcomes is as follows:

H_0 There is no difference in learning outcomes in the learning process in the IT class

H_a There are differences in learning outcomes in the learning process in the IT class

Method

This research is a quantitative study using a survey approach where the method used to obtain data is that the researchers treat using instruments in data collection, such as questionnaires, tests, structured interviews (Sugiyono, 2017). The aim is to obtain initial information regarding any problems that arise during the learning process.

Table 1. Table Questionnaire instrument grid

Variable	Aspect	Indicator	Question	Source
Learning effectiveness	9	20	20	Permendikbud No.22 Th 2016
Learn's motivation	4	15	26	Sugihartono, 2007
Career	4	12	20	

Analysis of the data used in this study using the independent Sample T Test. The basis used in making decisions on the results of the independent Sample T Test was carried out by comparing the results in the Sig column. (2-tailed) with an Alpha value in the study (0.05), with the following conditions:

a. If the value of Sig. (2-tailed) < Research Alpha (0.05), then H0 is rejected and Ha is accepted.

b. If the value of Sig. (2-tailed) > Research Alpha (0.05), then H0 is accepted and Ha is rejected.

The research location is at SMP Muhammadiyah 2 Cilacap which uses a population of all VII class students. Because the subjects in this study were class VII students who were learning in IT class, the sample was determined using purposive sampling technique and obtained a sample of 37

students. As a comparison, a different group is needed, namely a group of students who do not use multimedia facilities in learning (regular class). Because the regular class consists of three classes, the technique used is the cluster random sampling technique and 37 students are obtained. So that the sample used in this study amounted to 74 students.

Result and Discussion

Result

After collecting data and independent test sample T-test obtained the following data results:

Table 2. Subject value data

Subjects	Average value		highest score		Lowest score	
	IT	Regular	IT	Regular	IT	Regular
English	76,8	77,2	86,0	84,0	75,0	70,0
Mathematics	74,5	73,0	82,0	79,0	70,0	70,0
Science	79,7	73,0	84,0	79,0	76,0	70,0
Craft	77,9	73,3	86,0	78,0	72,0	71,0
Cultural Arts	78,6	79,1	85,0	88,0	74,0	72,0
Indonesian	78,9	78,4	83,0	80,0	74,0	76,0

Source: Data SMP Muhammadiyah 2 Cilacap processed, 2021

Table 3. Independent Sample T-test test results

Variable	F test		T test		
	F	Sig	t	df	Sig. (2-tailed)
Effective	0,43	0,51	0,17	74	0,86
Motivation	4,32	0,04	3,52	74	0,00
Career	0,52	0,48	0,21	74	0,83

Source: SPSS processed, 2021

Table 3. Hasil uji Independent Sample T-test

Subjects	F test		T test		
	F	Sig.	t	df	Sig. (2-tailed)
English	11,04	0,00	-0.47	74	0,64
Mathematics	28.74	0,00	1.84	74	0,07
Science	1.66	0,20	11.46	74	0,00
Craft	17.58	0,00	6.62	74	0.00
Cultural Arts	3.57	0.06	-0.62	74	0.53
Indonesian	51.05	0.00	1.11	74	0.27

Source: SPSS processed, 2021

The results of the independent sample t test calculation on the effective variable show the F value of 0.43 with a significance level of 0.51, while the t-count value is 0.17 < t table 1.66 with a

significance value of 0.86 which is greater than 0.05 so H0 is accepted and Ha is rejected.

The results of the calculation of the motivation variable show that the F value is 4.33 with a significance level of 0.04, while for the t arithmetic value 3.52 > t table 1.66 with a significance value of 0.00 which is less than 0.05 so that H0 is rejected and Ha received.

The results of the calculation of career variables show that the F value is 0.52 with a significance level of 0.48, while for the t arithmetic value 0.21 > t table 1.66 with a significance value of 0.83 which is greater than 0.05 so that H0 is accepted and Ha rejected.

The results of the independent sample t test calculation to see the difference in learning outcomes between the IT class and the regular class can be explained as follows:

a. English subjects

In English subjects, the F value is 11.04 with a significance of 0.001, the t value is -0.468 < t table is 1.66 and for the significant level shows the value is 0.641 > 0.05 so that H0 is accepted and Ha is rejected. This explains that the Indonesian language learning process carried out between the IT class and the regular class does not show a significant difference in learning outcomes.

b. Math Subjects

In mathematics, the F value is 28,735 with a significance of 0.000, the t-count value is 1.843 > t table, which is 1.66 and for the significant level it shows a value of 0.069> 0.05 so that H0 is accepted and Ha is rejected. This explains that the mathematics learning process carried out between the IT class and the regular class does not show a significant difference in learning outcomes.

c. Science subjects

In science subjects, the F value is 1.658 with a significance of 0.202, the t value is 11.455 > t table is 1.66 and for the significant level it shows a value of 0.000 < 0.05 so that H0 is rejected and Ha is accepted. This explains that the science learning process carried out between the IT class and the regular class shows a significant difference in learning outcomes.

d. Craft Subjects

In the craft subject, the F value is 17,577 with a significance of 0.000, the t-count value is 6.616 > t table is 1.66 and for the significant level it shows a value of 0.000 <0.05 so that H0 is rejected and Ha is accepted. This explains that in the craft learning process carried out between the IT class and the regular class, there is a significant difference in learning outcomes.

e. Cultural Arts Subjects

In the Arts and Culture subject, the F value is 3.569 with a significance of 0.063, the t-count value is -0.624 < t table is 1.66 and for the significant level shows the value 0.534> 0.05 so that H0 is accepted and Ha is rejected. This explains that the Cultural Arts learning process conducted between the IT class and the regular class does not show a significant difference in learning outcomes.

f. Indonesian subjects

In Indonesian subjects, the F value is 51.048 with a significance of 0.000, the t-count value is 1.112 < t table, which is 1.66 and for the significant level it shows a value of 0.270> 0.05 so that H0 is accepted and Ha is rejected. This explains that the Indonesian language learning process carried out between the IT class and the regular class does not show a significant difference in learning outcomes.

Discussion

The Effectiveness of The Learning Process in The IT Classroom

The results of statistical tests and data analysis on the effectiveness of the learning process in the IT class at SMP Muhammadiyah 2 Cilacap showed that the results were not optimal. This is based on a significant value of 0.86 which is greater than 0.05. The results of this study are not in line with research conducted by Irawan et al. (2017), which explains that the presence of multimedia devices in the learning process can increase the effectiveness of the learning process , and otherwise. The existence of adequate multimedia devices can also facilitate the work of teachers in managing teaching and learning activities to be more interesting, facilitate access to electronic learning resources, as well as automation in managing learning assessments (Nur'aini, 2020).

However, the results of this study are supported by research conducted by Asiah (2017) where the effectiveness of the learning process in IT classes has not shown optimal results. This can occur due to several limitations such as, teachers have difficulty monitoring students in the learning process who tend to abuse to play games, there are students who still have difficulty operating computers, students lack confidence so that they have difficulty in expressing the ideas of the material presented (Asiah, 2017).

Student Learning Motivation in The Learning Process in The IT Classroom

The results of statistical tests and data analysis on students' learning motivation in the IT class at SMP Muhammadiyah 2 Cilacap show the results that the learning process carried out using multimedia devices can foster student learning motivation. This is based on a significant value of 0.00 which is less than 0.05. The results of this study are in line with research conducted by Suwastika (2018) and Iflakhah (2017), which explain that the presence of multimedia devices in the learning process can foster student learning motivation, and otherwise.

The existence of multimedia devices makes students more interested and does not get bored quickly in carrying out the learning process in class, so that students become more happy, interested, and diligent in carrying out the learning process and in completing school assignments.

Students' Career Insight Through The Learning Process in The IT Classroom

The results of statistical tests and data analysis on students' career insight through the learning process in the IT class at SMP Muhammadiyah 2 Cilacap showed that the results were not optimal.

This is based on a significant value of 0.83 which is greater than 0.05. This is because students in IT class 1) do not understand personal abilities and interests; 2) do not have sufficient information about the world of work; 3) students are still confused about choosing a job; 4) students are less able to choose jobs that match their abilities and interests; 5) students feel anxious to get a job after graduating from school; 6) students do not have the option of continuing their education to college; and 7) students do not yet have an idea about the characteristics, requirements, abilities, and skills needed in the job, as well as job prospects for the future. This problem arose because many students who graduated from SMP Muhammadiyah 2 Cilacap did not continue to the next level of education due to family economic limitations.

So the results of this study are not in line with research conducted by Risqiyain et al. (2019) and Muttaqin et al. (2017), which explains that using multimedia in the learning process can provide career insight to students. Career insights for junior high school students can be used to help develop students to understand themselves better, learn about the world of education to gain experience that helps them in making career decisions. Further education, whether they are interested in entering high school or vocational school, which then decides to plan for the future whether to continue studying or choosing a job what is desired.

Differences in Student Learning Outcomes Between IT Classes and Regular Classes

Based on the results of testing on six subjects between the IT class and the Regular Class, the results are as follows:

a. English subjects

Based on the results of statistical tests and data analysis on learning outcomes for English subjects between the IT class and the regular class, it did not show a significant difference in learning outcomes. This is based on a significant value of 0.641 > 0.05 and can also be seen from the class average value which shows for the IT class of 76.8 with the highest score of 86 and the lowest score of 75, while in the regular class the average value of the class is 77.2 with the highest score was 84 and the lowest score was 70. Although it did not show a significant difference, the students' learning outcomes in the IT class were better than the regular class.

b. Math Subjects

Based on the results of statistical tests and data analysis on learning outcomes for Mathematics subjects between the IT class and the regular class, it did not show a significant difference in learning outcomes. This is based on a significant value of 0.069 > 0.05 and can also be seen from the average value of the class which shows for the IT class of 74.5 where the highest score is 82 and the lowest value is 70, while in the regular class the average grade is 73 where the highest score is 79. and the lowest value is 70. Although it did not show a significant difference, the students' learning outcomes in the IT class were better than the regular class.

c. Science subjects

Based on the results of statistical tests and data analysis on learning outcomes for science subjects between IT classes and regular classes, there are significant differences in learning outcomes. This is based on a significant value of 0.00 < 0.05 and can also be seen from the class average value which shows for the IT class of 79.7 where the highest score is 84 and the lowest value is 76, while in the regular class the average grade is 73. where the highest value is 79 and the lowest value is 70. So that the learning outcomes of students in the IT class are better than the regular class.

d. Craft Subjects

Based on the results of statistical tests and data analysis on learning outcomes for Craft subjects between IT classes and regular classes, there are significant differences in learning outcomes. This is based on a significant value of 0.000 < 0.05 and can also be seen from the class average value which shows for the IT class of 77.9 where the highest score is 86 and the lowest value is 72, while in the regular class the average grade is 73.3 where the highest score is 78 and the lowest value is 71. So that the learning outcomes of students in the IT class are better than the regular class.

e. Cultural Arts Subjects

Based on the results of statistical tests and data analysis on learning outcomes for the subjects of Cultural Arts between the IT class and the regular class, there is no significant difference in learning outcomes. This is based on a significant value of 0.534 > 0.05 and can also be seen from the average class value which shows for the IT class of 78.6 where the highest score is 85 and the lowest value is 74, while in the regular class the average grade is 79.3 where the highest value is 88 and the lowest value is 72. For the Arts and Culture subject, it did not show a significant difference but for student learning outcomes in the regular class it was better than in the IT class.

f. Indonesian subjects

Based on the results of statistical tests and data analysis on learning outcomes for Indonesian subjects between the IT class and the regular class, there is no significant difference in learning outcomes. This is based on a significant value of 0.270 > 0.05 and can also be seen from the average class value which shows for the IT class of 78.9 where the highest score is 83 and 62 the lowest value is 74, while in the regular class the average grade is 78, 4 where the highest value is 80 and the lowest value is 76. Although it did not show a significant difference, the students' learning outcomes in the IT class were better than the regular class.

It can be concluded that for science and craft subjects, there are significant differences in learning outcomes between students in the IT class and the regular class. Although the subjects of English, mathematics, Cultural Arts, and Indonesian did not show a significant difference in learning outcomes, the learning outcomes of IT class students were better than the regular class,

except for the Cultural Arts subject which showed the opposite result where class learning outcomes regular is better than IT class.

The results of this study are in line with research conducted by Santoso (2019); Khamidah et al. (2019); and Kahfi et al. (2021), that using multimedia in the learning process can improve student learning achievement. Information technology class students who are considered to have more intelligence than regular classes and obtain better learning facilities so as to produce better learning outcomes. In addition, interest and motivation are also very necessary in learning and learning, especially in all subjects. The aspects that need to be considered are related to technology and its users, in this case teachers, students, administrators and other users such as parents (Latip, 2020).

Conclusion

Based on the analysis and discussion, it is concluded that the learning process of students in the IT class at SMP Muhammadiyah 2 Cilacap has not been running effectively and the insight of career development for students is not optimal. However, the motivation of SMP Muhammadiyah 2 Cilacap students who study in the IT class has better motivation than students who study in the regular class.

The difference in learning outcomes between the IT class and the regular class can be seen in the Science and Craft subjects where the IT class gets a higher average score than the regular class. However, the subjects of English, mathematics, Cultural Arts, and Indonesian did not show a significant difference in learning outcomes, but the learning outcomes of IT class students were better than the regular class, except for the Cultural Arts subject which showed the opposite result where the learning outcomes regular class students are better than IT class.

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