

The Influence of Technology Based Learning Facilities to Student Learning Achievement

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ABSTRACT

Education is very important for us, the country can go forward because the people are educated. The success of education is determined by the quality of education itself. To know the quality of education required a result or achievement. One of the factors affecting achievement is the facility. The purpose of this study is to determine whether there is influence of learning facilities on student achievement. Sampling using simple random sampling system as much as 58 people from the total population as much as 70 people at the level of formal education. The method used in data collection that is using quisioner, observation and documentation. Data analysis technique used is using simple linear regression analysis. Based on the results of data analysis and hypothesis testing it is known that the two variables of learning facilities (X) and student learning achievement (Y) have a positive influence, this is evidenced by $r = 0.277$ where the guidelines used to provide interpretation proposed by Sugiyono are at intervals 0.20 - 0.399 which fall into the low category[18]. Based on the results of research that has been put forward by the authors which there is influence between learning facilities on learning achievement with low categories, it is necessary to improve the effectiveness of the use of learning facilities and conducted other research on other factors that affect student achievement in addition to learning facilities.

Keywords: The Influence Of Learning Facilities, Learning Facilities, Technology, Product Moment

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1. INTRODUCTION

Education is very important for us, according to the 1945 Constitution article 31 that every citizen is entitled to get education, education is not only an important pillar in the effort to educate the nation, but also an absolute requirement for the improvement of just society welfare. In all levels of education problems in Indonesia almost the same. The quality of education in Indonesia based on UNESCO 2011 data is ranked 69 out of 127 countries. In 2012 it is ranked 64th out of 120 countries, and in 2013 it rose three ranks to 121 from 185 countries. Based on the data, it can be said that Indonesia's education is still in a very poor condition. This is a warning to the quality of education in Indonesia, which causes many parents are willing to send their children to study abroad. Judging from the scores achieved by 15-year-old students (SMP) in reading, math and science, Indonesia became one of the lowest ranked countries. This affects the achievement of education quality according to the 2012 Program for International Study Assessment (PISA) survey.

Education data in 2010 mentioned that 1.3 million children aged 7-15 years are in danger of dropping out of school. The education system or curriculum in Indonesia is still changing frequently. The national education curriculum, which began in 1945, has undergone several changes. According to the data of Ministry of National Education 2010 access to education in Indonesia still needs attention, more than 1.5 million children each year can not continue school. In terms of teacher quality and teaching commitment, more than 54% of teachers have qualification standards that need to be improved and 13.19% of school buildings are in need of repair.

One of the school phrases is a vocational high school. One of the majors in a vocational high school is the software engineering department, which is very necessary to use technology-based learning facilities.

One of the success factors in learning is an adequate learning facility [23]. To achieve a good learning achievement required a smooth learning process, while the teaching and learning process smoothly must be supported by a complete or not a facility. Teaching and learning process will run smoothly if supported by complete facilities, from school buildings to the dominant tool that is props [31].

Literature Review

Learning facilities are all that is needed in teaching and learning process both moving and not moving to achieve educational goals can run smoothly, regularly, effectively, and efficiently [13]. Dalyono [6] states that the completeness of the learning facility will help students in learning, and the lack of tools or learning facilities will hamper the progress of learning. Facilities are the necessary tools to improve teaching and learning activities. Whether or not the learning process is influenced by a complete or not a facility. Teaching and learning process will run smoothly if supported by complete facilities, from school buildings to the dominant tool that is props [31]. Mohamad Surya [24] describes how important the physical condition of learning facilities to the learning process stating that, "The state of the physical facilities where the learning takes place on campus, school or at home greatly affect the efficiency of learning outcomes.

Learning outcomes are often called learning achievements according to Muhibbin Shah (2008: 141), "Achievement learning is the result of some factors that affect the overall learning process". Learning outcomes by Nana Sudjana [17] is a competence or ability that can be achieved by students after through learning activities designed and implemented by teachers in a particular school and class. According Dimiyati and Mudjiono [7] Mention that the results of learning is the result of an interaction of learning and teaching acts. Learning outcomes can also be marked by changes in behavior [2].

One of the factors that influence student achievement is learning facility [15]. According Violita Fanny [29] Learning facilities significantly influence student achievement class X office administration in SMK N 1 Payakumbuh. Based on other studies [5] states that 47.9% of student achievement on economic subjects is influenced by learning and learning motivation facilities, while the remaining 52.1% (100% -47.9%) is influenced by factors others not studied in such studies as student intelligence, student attitudes, and the social environment.

2. RESEARCH METHOD

Research method used in this research is correlation method. Correlation method is a research method that is done with the aim to describe two or more facts and also the properties of the object under investigation. The method is used to compare between equations with differences or facts based on the existing frame of mind so that the results can be seen clearly.

The research was conducted at State Vocational High School 5 Surakarta located at Jl. Laksda Adi Sucipto, Manahan Surakarta. the population used is 70 students of class XI RPL consisting of class XI RPL A, XI RPL B, and XI Axioo with sample of 58 people. Techniques of data collection using questionnaires, observation, and documentation. Test instruments used are (1) Test Validity and (2) Test Reliability. Data analysis techniques are (1) Linearity Test, (2) Normality Test, and (3) Regression Test. Result and Discussion

3. RESULT AND ANALYSIS

3.1. RESULT

In this research, the result $r = 0.277$ with product moment correlation using the formula below:

$$r = \frac{\sum xy}{\sqrt{\sum x^2 \sum y^2}} \quad r = \frac{\sum xy}{\sqrt{\sum x^2}}$$

Where :

r = Coefficient of product moment correlation between variable X with variable Y

To know whether there is influence of variable X to variable Y then used simple linear regression with the formula $Y = a + bX$. To find a, the following formula is used :

$$a = \frac{(\sum Y)(\sum X^2) - (\sum X)(\sum XY)}{n\sum X^2 - (\sum X)^2}$$

$$b = \frac{n\sum XY - (\sum X)(\sum Y)}{n\sum X^2 - (\sum X)^2}$$

The regression equation obtained is $Y = 49,96 + 0,25X$ where: 49,96 is constant which influence student's learning achievement without influenced by change value of technology based learning facility, 0,25 is regression coefficient affect student achievement.

Table 1. Regression (research data is processed)

	Unstandardized Coefficients	t	Significant
Constant	49,966	3,642	0,001
Coefficients Regression	0,250	2,157	0,035

Table 2. Questionnaire Data (research data is processed)

	Sub 1	Sub 2	Sub 3	Sub 4	Sub 5	Sub 6	Total Sub
Strongly Agree	11	13	17	1	37	22	101
Agree	16	29	33	8	20	33	139
Neutral	17	14	5	34	0	3	73
Disagree	8	2	3	14	1	0	28
Strongly Disagree	6	0	0	1	0	0	7
Total	58	58	58	58	58	58	58

From the table above can be seen that the number of answers strongly agree as many as 101 people, the answer agreed as many as 139 people, neutral answers as many as 73 people, the answer does not agree as many as 28 people, and the answer strongly disagree as many as 7 people.

Table 3. Learning achievement (research data is processed)

Top quartile	Bottom Quartile	Mean	KKM
98	53	79,3	76

3.2. ANALYSIS

From the results of data presentation shows that technology-based learning facilities in SMKN 5 Surakarta is good. As an example can be seen from the availability of internet-based network facilities called wifi is already available well. The wifi network has filled almost every room in the entire school. Even the wifi signal already covers in the field area. Use of wifi can also be used by students, teachers, school employees. There are two types of networks, namely from internet-based telkom service providers and internet-based biznet. Although there are two networks available with different ISPs, but according to the students, they can not meet the students' needs. This is because the wifi network using wireless network which signal can change at any time and the result of internet speed also up and down. In addition, the bandwidth factor is somewhat less based on the number of access points to the number of students also trigger internet speed in terms to meet the needs of students. In addition to using facilities based on internet technology, students are also still using conventional facilities, which in this case is a book. In SMK 5 Surakarta provides library learning facilities, which the collection of books there is practically complete enough. However, the number of students using conventional book facilities is less than that of students using technology-based facilities such as the internet. Apart from learning facilities based on internet wifi technology, the school also has a LAN (Local Area Network) where the facility is almost complete. For the computer lab there are each one port for each computer and in the Axioo class there is already a port on each student desk.

Although using the moving class method but the learning media used is good. The use of LCD in each class is already running. By using the LCD in the process of teaching and learning activities of course students can receive the material delivered by the teacher better than by delivering the material using the lecture method. In addition to LCD usage, the use of loudspeakers has also been applied. It can be seen in every class already have speakers. All the learning facilities available either wifi network, loudspeaker, and LCD can be used properly.

In addition to the availability of technology-based learning facilities well, the facility is also fully supported by teachers / teachers. By using existing technology-based learning facilities, the teacher's work

can be completed well and as expected. In using technology-based learning facilities, Software Engineering teachers at SMKN 5 already have expertise and experience. There are even teachers who already get certificates in technology-based learning facilities in this case is the internet. The number of tasks does not prevent teachers from completing their tasks. That's because using technology-based facilities. In addition, teachers are also easier to deliver a learning material in the classroom.

By using facilities based on internet technology, the process of searching school tasks by students can be done quickly. However, the speed of job search is also influenced by bandwidth and also service provider sites such as blogs, forums and social media. For example students are assigned tasks by teachers. By using LAN-based Internet network of course the connection will be better than the students who use wifi-based internet network. In addition, also the search site tasks also affect the situation. Sites that use foreign languages will be more difficult to understand than those using the Indonesian language. Using the internet in doing the tasks provided by the teacher will also provide a faster and better understanding. This is because in the internet there can be text, images, sound, and video which is better than using books that contain text and images only. The use of internet-based facilities can also make students discover new things. For example by using internet facilities students can communicate and discuss with other students or with common people through a forum. By discussing and exchanging ideas can lead to new knowledge between the two parties. It also can work on building or developing material that has been taught by the teacher.

Based on the data obtained, the technology-based learning facilities can assist students in completing tasks given by the teacher maximally. The task can be done with the help of internet. By doing the task given by the teacher maximally then the effectiveness of student learning will be better. In addition students can also apply the material presented by the teacher. For example the teacher gives material about making the table in HTML, by developing it then the student can make simple website. Students can also learn independently, be it whenever and wherever. Based on the data that has been obtained level of student achievement in SMK N 5 Surakarta in particular class XI RPL on the subjects of web programming is good. This is evidenced by the average value of all students above the minimum completeness criteria (KKM). While learning facilities, especially based on technology is also good. The facility is complete and in good shape too.

To determine whether the correlation coefficient is significant or not it is necessary to compare with r table (table r product moment) with the provisions :

H₀: There is no relationship between technology-based learning facilities and student achievement.

H_a: There is a relationship between technology-based learning facilities and student achievement.

Based on the results of the research then obtained r count $\geq r$ table, significant correlation.

If the set error rate of 5% (95% confidence level) and $N = 58$ r table is obtained: 0.2586. It turns r count (0,277) $\geq r$ table (0,2582) so H_0 rejected and H_a accepted

Can be interpreted that there is a positive and significant correlation of 0.277 between technology-based learning facilities with student achievement class. Means the higher the learning facility the higher the learning achievement.

The contribution of variable X to Y is the determinant coefficient which $r^2 = (0,277)^2 = 0,077$. This means that the variance that occurs in the 7% learning achievement variables can be explained by the variance in the learning facility variables, or the learning achievement of 7.7% is determined by the learning facility whereas 92.3% by other factors.

The test uses two-tailed test with significance level $\alpha = 5\%$. (the test is done by two sides because to know whether or not there is a significant influence, if 1 side is used to know the relation smaller or bigger). The level of significance in this case means we take the wrong risk in making a decision to reject the correct hypothesis by as much as 5% with the following formula:

$$t = \frac{r\sqrt{(n-2)}}{\sqrt{1-r^2}}$$

Syarat :

If t count $\leq t$ table then H_0 is accepted or the correlation is not significant, if t count $\geq t$ table then H_a accepted or significant correlation :

$$t = \frac{0,277\sqrt{(58-2)}}{\sqrt{1-[(0,277)]^2}}$$

$$t = \frac{0,277(7,48)}{\sqrt{1-[(0,277)]^2}}$$

$$t = 2,15$$

H₀: There is no influence between technology-based learning facilities and student achievement.

H_a: There is a influence between technology-based learning facilities and student achievement..

For error 5% test two parties and $dk = n - 1 = 57$, then obtained t table = 2,00247, then t arithmetic $\geq t$ table where H_0 rejected and H_a accepted or significant correlation. From the calculation results obtained that the influence between technology-based learning facilities with learning achievement was positive and

weak, this can be proven by $r = 0.2737$ where the guidelines to provide interpretation proposed by Sugiyono are at intervals of 0.20 to 0.399 which fall into the category low [19].

Table 3. Results of Hypothesis Analysis

dk	Taraf Kesalahan	T Count	T Table	Hypothesis
98	5 % (0.05)	2,15	2,00247	Accepted

The data analysis of the previous regression is the interpretation is the improvement of technology-based learning facilities will be followed by an increase in learning achievement, the regression equation provides information that if there is no technology-based learning facilities then the learning achievement index of 49.96. If there is an increase in technology-based learning facilities then the learning achievement will increase as well.

Based on the above analyzes, the hypothesis that the authors proposed that there is an influence between technology-based learning facilities with student achievement is acceptable and proven true. In accordance with previous research that there are positive and significant influence of learning facilities, motivation and interest in learning together towards student achievement by Pekik Wicaksono [30]. Also strengthened by the research Ambarsari Iis (2013) that the completeness of learning facilities and learning independence together affect the economic learning achievement. The amount of influence of learning facilities and independence is 28.8%. There is also a positive influence between learning physics with learning achievement of Pancasila Education and citizenship (PPKn) of grade 5 students of SDN 53 Sawerigading. The magnitude of the correlation coefficient between the two variables mentioned above is 0.2602 with the determination coefficient of 6.77% (Hasnah). School facilities and social environment partially significant effect on student learning outcomes class XI and XII IPS 1 MAN 1 Madiun. The result of the test of the value of absolute difference shows that the social environment variable is a moderator vector that is able to strengthen the influence of school facilities on student learning outcomes. Simultaneously the variables of school facilities and social environment affect the results of student learning (Nik amah & Angga Dwi, 2015).

4. CONCLUSION

Based on the results of research and discussion, it can be taken a conclusion as follows :

1. There is a significant positive influence of 0.27 between technology-based learning facilities with student achievement on the subjects of web programming class XI RPL in SMKN 5 Surakarta.
2. Technological learning facilities at SMKN 5 Surakarta are in good category, where facilities are complete and in good condition.
3. The level of student achievement in SMKN 5 Surakarta in particular class XI RPL on the subjects of web programming is good. It is based on the index value of students class XI RPL in SMKN 5 Surakarta in the course of web programming average is above the minimum criterion of the minimum mastery of 76.

REFERENCES

- [1] Ambarwati, Iis (2013). *Pengaruh kelengkapan Fasilitas Belajar dan Kemandirian Belajar terhadap Prestasi Belajar Ekonomi pada Siswa Kelas X SMA Negeri 2 Sukoharjo Tahun Ajaran 2012/2013*.
- [2] Aunurrahman. (2012). *Belajar dan Pembelajaran*. Bandung: Alfabeta.
- [3] Bambang Eka Purnama. (2014). *Cara mudah membuat web dengan CMS*. Yogyakarta: Graha Ilmu.
- [4] Burham, N. (2012). *Penilaian Pembelajaran Bahasa Berbasis Kompetensi*. Yogyakarta: BPFY-Yogyakarta.
- [5] Camellia, L. (2016). *Pengaruh Fasilitas Belajar dan Motivasi Belajar terhadap Prestasi belajar di SMA N 5 Surakarta*. Surakarta: FKIP UNS.
- [6] Dalyono. (2001). *Psikologi Pendidikan*. Jakarta: Rineka Cipta.
- [7] Dimiyati dan Mudjiono. (2009). *Belajar dan Pembelajaran*. Jakarta: Rineka Cipta.
- [8] Eny Dwi Suharyati, 2013. *Fasilitas Pendidikan Berbasis Teknologi Terhadap Efektifitas Belajar Mahasiswa Ilmu Sosial Politik Universitas Mulawarman Samarinda*. Samarinda : eJournal Ilmu Administrasi, 2013, 1 (2): 737-748
- [9] Fraenkel dan Wollen. (2008). *How To Design And Evaluate Research In Education*. New York: McGraw-Hill.
- [10] Hamalik, O. (2003). *Proses Belajar Mengajar*. Jakarta: Bumi Aksara.
- [11] *Kamus besar bahasa Indonesia*. (2001). Jakarta: Balai pustaka.
- [12] Mansyur, R. dan. (2008). *Penilaian Hasil Belajar*. Bandung: CV.Wacana Prima.

- [13] Muhroji. (2004). *Manajemen Pendidikan*. Surakarta: FKIP UMS.
- [14] Mulyasa. (2007). *Standar Kompetensi dan Sertifikasi Guru*. Bandung: Rosda Karya.
- [15] Nasution, M. (1994). *Teknologi Pendidikan*. Jakarta: Djambatan.
- [16] Singarimbun, Masri dan Sofian Effendi, *Metode Penelitian Survei*, Jakarta: LP3ES, 2008.
- [17] Sudjana, N. (2000). *Penilaian Hasil Belajar*. Bandung: Rosda Karya.
- [18] Sugiyono. (2007). *Metode Penelitian Administrasi*. Bandung: Alfabeta.
- [19] Sugiyono. (2012). *Metode Penelitian Kuantitatif Kualitatif, Dan R&D*. Bandung: Alfabeta.
- [20] Sugono, D. (2008). *Kamus Bahasa Indonesia*. Jakarta: Pusat Bahasa Depdiknas.
- [21] Suharsimi, A. (2010). *Prosedur Penelitian, suatu pendekatan praktik*. Jakarta: Rinneka Cipta.
- [22] Suprayekti. (2003). *Interaksi Belajar Mengajar*. Jakarta: Direktorat Tenaga Kependidikan, Dikdasmen, Depdiknas.
- [23] Suryasubrata. (1989). *Proses Belajar Mengajar Di Perguruan Tinggi*. Yogyakarta: Andi Offset.
- [24] Suryasubrata. (2004). *Psikologi Pembelajaran dan Pengajaran*. Bandung: Pustaka Bani Quraisy.
- [25] Sutikno, S. (2013). *Belajar dan Pembelajaran*. Lombok: Holistika.
- [26] Suwartono (2014). *Dasar-dasar metodologi penelitian*. Yogyakarta: Andi Offset.
- [27] Syah, M. (2008). *Psikologi Pendidikan Dengan Pendekatan Baru*. Bandung: Rosda Karya.
- [28] The Liang Gie. (2002). *Cara Belajar Yang Efisien*. Yogyakarta: Pusat Kemajuan Studi.
- [29] Violita, F. (2013). *Pengaruh Lingkungan Keluarga dan Fasilitas Belajar terhadap Prestasi Belajar Siswa Kelas X Administrasi Perkantoran di SMKN 1 Payakumbuh*.
- [30] Wicaksono Pekik (2102). *Pengaruh Fasilitas Belajar, Motivasi Belajar, dan Minat Belajar terhadap Prestasi Belajar Siswa Kelas X SMK Muhammadiyah Prambanan Tahun Ajaran 2011/2012*.
- [31] Widjaya. (1994). *Sarana Pendidikan*. Bandung: Tarsito.