The Influence of Information Technology Utilization And Implementation Of Class Supervision Toward The Performance Of State Vocational High School In Kabupaten Tegal

Tatyantoro Andrasto[1], Arif Zazuli[2], Haryono[3], Tri Joko Raharjo[4], Kardoyo[5]
{tatyantoro@mail.unnes.ac.id, tkembung@gmail.com, fransharyono@mail.unnes.ac.id}

[1,2]Electrical Engineering Department, Universitas Negeri Semarang, Semarang, Indonesia
[3]Faculty of Education, Universitas Negeri Semarang Indonesia

Abstract. This research aims to determine: (1) the influence of information technology utilization toward the teachers' performance; (2) the influence of implementation of class supervision toward the teachers' performance; (3) the simultaneous influence of information technology utilization and implementation of class supervision toward the performance of state vocational high school teachers in Kabupaten Tegal. This research is a descriptive statistical study carried out in seven vocational high school with state-labelled in Kabupaten Tegal. The sampling technique used is random sampling, from a total population of 580 people taken as many as 10% - 15% of people refer to the theory. The instrument and reliability validity are tested using the IBM SPSS v18 program. The results show that: (1) there is a positive and significant influence of information technology utilization on teacher performance; (2) there is a positive and significant influence on the implementation of class supervision on teacher performance; (3) information technology utilization and the implementation of class supervision give simultaneous influence toward the performance of state vocational high school teachers in Kabupaten Tegal.

Keywords: Information technology, Class supervision, Teacher performance.

1 Introduction

The progress level of a country can be seen from the educational sector. Good quality of education in a country can yield a generation of the superior nation to compete in the global era. National education is one of the parts of the development sector of human resource quality whose vision to create a strong and authoritative educational system. Various efforts continue to be made by the Government to improve the quality of education by implementing an educational system that

has clear and mature objectives. The goal is to empower Indonesian citizens to develop a quality and competitive human being so as to answer the challenges of an increasingly complex era.

In addition to the central functions of educational purposes, it turns out that the development of information and technology develops very rapidly. That development has been presenting its own challenges, where the acceleration of technology occurs very rapidly across time and sometimes not followed by the increase in the ability to utilize it, hence the utilization of technology in learning is one of the pedagogic competencies that teachers must have. Teachers are required to be at the forefront of technology mastery as the absolute acceleration form must be transferred to the succeeding generation. It is to avoid the gap between teacher and students knowledge.

It seems that the use of information technology in the educational world does not always run smoothly, because technological advances are not always followed by the quality of human resources. It is in line with what Bonita Destiana put forward, she conveys the bottom of aligning the technological advances and the quality of teachers is still difficult because most teachers are still accustomed to the old methods in the learning process, namely A method of lecture that is based on content to complete the material, while schools have a means and support infrastructure for learning technology-driven information such as computer laboratories, LCD projector and Internet access [5].

In addition to realizing a good teaching performance for teachers, there must be supervision activities as efforts to provide assistance and services to improve the quality of teaching teachers in the classroom as a form of developing the potential and quality of teachers [13]. Improving the quality of learning and professionalism of teachers in their performance is closely related to the effectiveness of supervision services. The headmaster becomes an instructional leader to maintain and improve the quality of effective and efficient learning as Eben Egwu said *"The principal as an instructional leader is responsible for maintaining and improving. The quality of instructional programmes for the effective and efficient attainment of the set educational objectives of the school "*[6].

In terms of its own implementation, there are obstacles faced in the classroom supervision. Such constraints may come from within the principal in the form of the complexities of the school principal, whose supervision duties cannot be performed by the principal, which can not be done on their own to be resolved by Delegation of authority by the headmaster to the vice principals or senior teachers. In addition, supervision problems also occur in the teachers themselves in the form of lack of supervised teachers, which means that the motivation for teachers to be supervised is still lacking. This is because there is still a strong assumption from teachers that the mere supervision is merely an activity to fault-finding.

2   Literature review

The research aims to determine the influence of information technology and implementation of the class supervision on teacher performance. As for some previous researches that became a reference in this research, examined the influence of the utilization of information technology on the quality of student service at the Faculty of Engineering, University of Majalengka. The results of the study proved that there is influence on the utilization of information technology to service

quality. [12] examined the influence of information technology on the teachers ' profession. Using linear regression calculations, the study revealed that the factors defined were affecting the teachers in using IT in their profession assignments as teachers. This research was conducted in Kebumen regency.

[4] examined the teacher's perception of the implementation of the teaching supervision by the headmaster at SMP N Kecamatan Lareh Sago. The study concluded that the teacher's perception of supervision by the principal was positive. [11], a thesis study in SMA Negri Sekota Magelang, aims to uncover the influence of class visits and the efficacy of teacher performance and learning achievement. This research showed the results that learning achievements are influenced simultaneously by class visit supervision, teacher competence and teacher performance.

The utilization of Information technology (IT) to support the various needs and development of the organization [2], individuals and companies will certainly bring something positive. No exception to its utilization in the world of education, the exchange of information between fellow teachers, fellow students, and between teachers and students become more effective with the help of information technology. The utilization of this information technology will certainly help to improve the performance of teachers in school. Thus it can be taken hypotheses in this study that the use of information technology variables has a significant influence on the teacher's performance. With sufficient knowledge and the maximum use of information technology, teacher work will be assisted both inside and outside the teaching and learning activities.

Supervision is a series of activities to help teachers develop their ability to manage the learning process to achieve learning objectives. The quality of improvement efforts of teachers through supervision are expected to improve the quality of student learning outcomes. The teacher's performance assessment in supervision is to look at the real condition of the teacher's performance to answer questions, such as what teachers do in the classroom, what are the advantages and disadvantages of teachers in implementing the learning process and so on. Based on answers to these questions,it will get information about the teacher's ability to manage learning. It can be taken the hypothesis that the supervision performed by the headmaster has a major influence on teacher performance. The improvement on teacher performance indirectly affects students achievements as well. Because good teachers performance can be seen from the results obtained from the students assessment or achievement.

Based on the research framework above, the presence of information technology and the role of headmaster as a supervisor greatly affects the results of teacher performance. This means that the three components above are interconnected with each other in achieving the learning objectives. To make it easier to understand the framework, the researcher presents them in the form of a paradigm image:
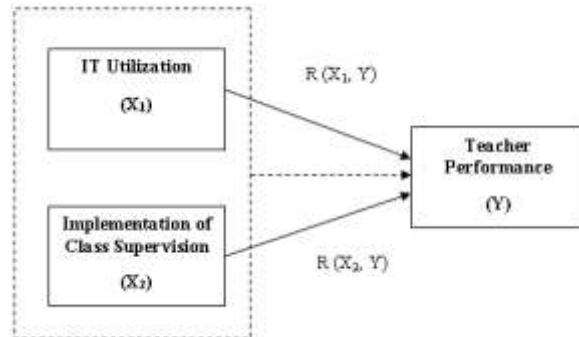
Figure 1. Paradigm Framework Research

3   Research methods

3.1. Date and time

The research was conducted on October 16th until November 5th 2019. While the research place is implemented in all of state vocational high schools in Kabupaten Tegal, Central Java.

3.2. Research type

This research is a descriptive statistical study with a quantitative approach. The purpose of descriptive research is to represent/describe what variables/conditions are in a situation.

3.3. Research subject

Samples are partial or representatives of the population studied [1]. The samples used in this study is random sampling. A random sampling is a sampling technique by mixing subjects-regardless of levels in the population. If the research population amounts to less than 100 then the samples taken are all. But if the research population amounted to more than 100 then samples can be taken between 10% to 15%, or 20% to 25% of the total population.

Here are the data of the schools and the number of teachers of State Vocational High Schools in Kabupaten Tegal:

Table 1. School Name and Number of Teachers

School name	Number of teachers
SMK Negeri 1 Bumijawa	62
SMK Negeri 1 Slawi	89

SMK Negeri 2 Slawi	73
SMK Negeri 1 Warureja	59
SMK Negeri 1 Adiwerna	138
SMK Negeri 2 Adiwerna	83
SMK Negeri 1 Dukuhturi	76
Total	580

So in this research, the researcher took a sample number of 75, because it is already qualified sample that can be taken i.e. 58 up to 87 people.

3.4. Technique of Data Collection

Technique of data collection is the way to obtain data in research. Questionnaire or poll is a technique of data collection done by giving a set of questions or written statements to the respondent to be answered. Questionnaires are efficient data collection techniques when researchers know exactly which variables are measured and know what to expect from respondents [9].

Table 2. Respondent's response rating

Answer	Score
Stongly Agree	4
Agree	3
Less Agree	2
Disagree	1

3.5. Instrument Validity and Reliability

In order to acquire a valid instrument, the researcher creates question item on each indicator of each variable. Testing the validity of the instrument on this study using the help of the SPSS series 18 software program, according to [14] by conducting bivariate correlation between each indicator score and the total number of construction scores. Instruments are said to be valid if the significance value of the instrument item score (Sig 2 tailed) is < 0.05.

Based on the test of instruments conducted to 30 teachers of SMK Negeri in Kabupaten Tegal as many as 53 statements divided into two free variables and one bound variable. Here are the validity test results based on each variable. From 53 statements, there are 5 invalid statements. Hence the statement that can be used to obtain data in this study is as much as 48 items.

The reliability test according to Wahyudin (2015) is a test conducted to detect whether a poll or questionnaire as a research variable measuring instrument, has provided consistent measurement results or tests over time. A questionnaire is said to be religious or reliable if a person's answer to the statement is consistent or stable from time to time. Reliability measurements can be done in two ways with repeated measure or re-scrolling and one shot or once only measurement [14].

Researchers in this study used one shot reliability measurements or once measurements. This measurement is done only once and then the result is compared to other questions or measuring correlation between questions answers. The reliability test in this study used IBM SPSS Statistic 18. [14] says that SPSS provides the facility to measure the rebility with the Cronbach Alpha (α)

statistical test, where a variable is said to be reliable if it delivers a Cronbach Alpha (α) value of > 0.70. The results of the instrument reliability can be seen in table 3 as follows:

Table 3. Reliability Test

Variable	Cronbach's Alpha
Technology Utilization	0,827
Classroom Supervision	0,890
Teacher Performance	0,820

4 Result and discussion

4.1. Descriptive statistical analysis

The three research variables, i.e. utilization of information technology, the implementation of class supervision, and the performance of teachers are measured using a method of questionnaire. This research uses the help of IBM SPSS v21 which obtain descriptive statistical results as follows:

Table 4. Descriptive statistical test results

Variable	Average Score
Utilization of Information Technology	59,72
Implementation of Class Supervision	53,67
Teacher Performance	46,15

Based on the average calculation results of 75 samples of teachers toward 18 statements that measured the variable X1, 16 statements for measuring X2 and 14 statements to measure X3, that can be known as a whole teachers of SMK Negeri in Kabupaten Tegal are classified into teachers with the utilization of information technology of 59.72 which belongs to the very high category, 53.67 is a very high category for the influence of class supervision on teachers and 46.15 for the performance of teachers also include as very high category as well.

4.2. Normality test

Normality test is used to test whether in regression model, the residual variables have a normal distribution or not. A normality test can be carried out using the non-parametic Kolmongrov-Smirnov statistical test. The magnitude of the value of Kolomongrov-Smirnov the performance of the teacher as a bound variable is 0.633 and significant at 0.818 whose value is above 0.05. So it can be said that residual data with the teacher's performance as a bound variable is normal distribution.

4.3. Linearity test

The linearity test is used to determine whether the specifications of the model used are correct or incorrect. Test results can be seen in the following table:

Table 5. Linearity Test Result

Variable	sig. Value
X1 against Y	0,754
X2 against Y	0,969

Based on the linearity test result on the table output "ANOVA Table" above, it is revealed that the value of Sig. Deviation From Linearity amounted to 0.754 X1 against Y, and 0.969 X2 against Y, higher than 0.05. It can then be concluded that there is a significant linear relationship between the utilization variables of information technology (X1) and the implementation of the class supervision (X2) with the performance of the teacher (Y).

4.4. Multicholinerity test

The Multicholinerity test aims to test whether a regression model is found to be correlated among independent variables. Multicholinerity test can be seen from the output of SPSS in the Variance inflation factor (VIF) value and the tolerance value. If the value tolerance > 0.10 or equal to the VIF value of < 10 then it can be inferred not occurring Multicholinerity.

Table 6. Multicolonearity Test

Variable	Tolerance	VIF
X1	0,793	1,262
X2	0,793	1,262

The calculation result of the tolerance value in the table above indicates that the tolerance value in both the independent variable is more than 0.10 (tolerance > 0.10) and the VIF value of < 10. So it can be concluded that there is no symptom of multicolonierity in the regression model used.

4.5. Heteroscedasticity test

Heteroskedasticities test is aimed at testing whether the regression model occurred variance inequality of the residual one observation to another observation [1]4. Testing conducted with Test Park, by looking at the coefficients table when the parameter coefficient for independent variables is not significant or > 0.05, there are no Heteroskedasticities [14].

Table 7. Heteroscedasticity Test

Variable	sig. Value
X1	0,984
X2	0,196

According to the table above, it can be known the significance value in each variable > 0.05. It can be concluded that the regression model used does not contain Heteroskesdastisity.

4.6. Hypothesis test

The hypothesis test results can be seen from the following table:

Table 8. Hypothesis Test

Variable	t /F	Sig.
X1	3,512	0,001
X2	3,076	0,003
X1 + X2	19,951	0,000

The statistical test result on the utilization of Information technology (X1) variable obtain a value of t calculation = 3.512 with a value of significance = 0.001. While the implementation of class supervision variable (X2) is obtained the value of t calulation = 3.076 with a significance value of 0.003. Hypotheses will be accepted if $T_{cal} > T_{table}$ or the significance value<Probability that is 0.05 and hypotheses are rejected if the result is otherwise.

Based on the test table above, it can be seen through the significance value of X1 is worth 0.001 < 0.05 and X2 is worth $0.003 < 0.05$ then $Ha_1$and Ha_2 are accepted, which means the influence of utilization of information technology variable to the teacher's performance as well as the implementation of the class supervision on the teacher's performance are known.

Based on the output table above, it is known that Fcal amounted to $19,951 >$ Ftable 3.12 and significance value $0.000 < 0.05$. As the basis of F test decision making if the value of Fcal $>$ F table or significance of < 0.05 then it can be concluded that HA3 is received, which means that there is the simultaneous influence between the utilization of information technology and the implementation of the class supervision on the teacher's performance.

Table 9. Hypothesis Desicion

Hypothesis	Desicion
Ha_1 : there is positive and sigificant values on the Impelementation of Information Technolgy.	Acceped
Ha_2 : there is positive and significant values on the implementation of classroom supervision on the teacher's performance	Acceped
Ha_3 : there is simultaneous influence among the utilization of information technology and the classroom supervision on the teacher performance	Acceped

5   Conclusion and suggestion

5.1. Conclusion

Based on the results of the study, it can be concluded as follows:

(1). The utilization of information technology affects positively and significantly to the performance of teachers of state vocational high schools in Tegal regency. The use of information technology that is utilized maximally among state vocational high schools teachers in the district makes the teacher's performance increased in teaching activities in the classroom.

(2). Implementation of class supervision positively and significantly to the performance of teachers of state vocational high schools in Tegal regency. Supervision activities performed by the headmaster to teachers while teaching in the class resulted in an evaluation to assess the ability of teaching teachers. From the evaluation the teacher will try to improve its shortcomings and improve its ability in teaching so that it will impact on the achievement of its performance.

(3). Utilization of information technology and the simultaneous implementation of the class supervision of the teacher's performance. With the utilization of high information technology and the influence of the implementation of class supervision in line, then both simultaneously will affect the performance of teachers as teachers.

5.2. Suggestion

Based on the analysis and results of the discussion, the researcher suggest the following list:

(1). To improve the performance of teachers not only done by utilizing information technology and implementing class supervision only, but need improvement of discipline, creativity, availability of facilities and appreciation to the achievement accomplished by the teacher.

(2). It is good that the school is more actively conducting training in the utilization of information technology for teachers, so that the facilities that have been available in school can be utilized to the fullest.

(3). The intensity of the supervision of the class that has been running is maintained, even in improving the quality so that the teacher's performance is better again.

(4). For schools are expected to add computer and Internet facilities as part of information technology, in order to improve the performance of teachers, also expected to influence students' learning achievement.

(5). Subsequent studies are expected to expand the research object by researching intermediate primary education or even college education. It is expected to add variables or use other variables that can affect the performance of a teacher.

References

[1] Arikunto, S. (2013). *Prosedur Penelitian Suatu Pendekatan Praktik*. Jakarta: PT Rineka Cipta.Borg, W. R., & Gall, M. D. (1989).

[2] Ahmad Khafidin, Tatyantoro Andrasto, Suryono (2019), *Implementation flow control to improve quality of service on computer networks*, Indonesian Journal of Electrical Engineering and Computer Science, 16(3):1474~1481

[3] B. Uno, H. Hamzah. dan Lamatenggo, Nina. (2011). *Teknologi Kominikasi dan Informasi dalam Dunia Pembelajaran*. Cet. II, Jakarta: Bumi Aksara.

[4] Betrianis. (2013). Persepsi Guru Tentang Pelaksanaan Supervisi Pembelajaran oleh Kepala Sekolah di Sekolah Menengah Pertama Negeri Kecamatan Lare Sago Halaban Kabupaten Lima Puluh Kota. *Bahana Manajemen Pendidikan* 1(1): 65-72.

[5] Destiana, Bonita. (2014). Faktor Determinan Pemanfaatan TIK dan Pengaruhnya Terhadap Kinerja Guru pada SMK. *Jurnal Pendidikan Fokasi* 4(3): 287.

[6] Egwu, Sarah Eben. (2015). Principal's Performance in Supervision of Classroom Instruction in Ebonyi State Secondary Schools. *Journal Of Education and Practic*. 6(15): 99.

[7] Priansa, Donni Juni dan Somad, Rismi. (2014). *Manajemen Supervisi dan Kepemimpinan Kepala Sekolah*. Cetakan pertama. Bandung: Alfabeta.

[8] Risnawati, Rini S. (2009). Hubungan Proses Belajar Mengajar Berbasis Teknologi Dengan Hasil Belajar. *Jurnal Psikologi*. 36(2): 164-176.

[9] Sugiyono. (2012). *Statistika Untuk Penelitian*. Bandung: Alfabeta.

[10] Susanti, Deffy. (2018). Pengaruh Pemanfaatan Teknologi Informasi Terhadap Kualitas Pelayanan Mahasiswa. *Jurnal Teknologi Dan Informasi*. 4(1): 38 – 43.

[11] Wihanta, Edi. (2007). Pengaruh Supervisi Kunjungan Kelas oleh Kepala Sekolah dan Kompetensi Guru terhadap Kinerja Guru dan Prestasi Belajar Siswa SMA Negeri se Kota Malang. *Tesis*. Universitas Negeri Semarang. Semarang.

[12] Wimartono, Sapto. (2016). Analisis Pengaruh Penggunaan Teknologi Informasi Terhadap Profesi Guru (Studi Kasus: Kabupaten Kebumen). *Jurnal Pendidikan* 3(1): 74-88.

[13] Mas, S. R., Masaong, A. K., & Suking, A. (2021). School Principal Entrepreneurial Competency Development Model to Optimize Generating Production Unit Income. Journal of Educational and Social Research, 11(5), 109-109.

[14] Ghozali, Imam. 2016. Aplikasi Analisis Multivariete Dengan Program. IBM SPSS 23 (Edisi 8). Cetakan ke VIII. Semarang : Badan Penerbit