The Effect of the Use of the Internet for Learning Activities and Pedagogic Abilities on Teacher Performance

Tri Nur Wahyudi
Universitas Muhammadiyah Surakarta

Hepy Adityarini
Universitas Muhammadiyah Surakarta

Harsono
Universitas Muhammadiyah Surakarta

Amelia Puspitasari
Universitas Muhammadiyah Surakarta

Naning Wahyuni
The University of Auckland New Zealand

This study aims to describe the impact of internet use for learning activities and pedagogic abilities on teachers' performance. The study adopted a census design approach. The data in this study were collected using a closed questionnaire from a population of 68 teachers at Jumantono State Vocational High School, Karanganyar, Indonesia. The results of data analysis obtained the regression equation Y = 27.280 + 0.303 + 0.467. In addition, the results showed that partially and simultaneously internet use and pedagogical ability had a significant effect on improving teacher performance as indicated by the t-count x1 3.140, t-count x2 4.877 > t table x1, x2 1.997 and the F test obtained F-count > F-table, which is 39.427 > 3.14 and a significance value <0.05, which is 0.003. The results of the coefficient of determination (R2) of 0.534, show that the magnitude of the influence of internet use and pedagogic ability on teacher performance is 53.4%, while the remaining 46.6% is influenced by other variables not examined in this study.

Keywords: internet use, pedagogic ability, teacher performance

INTRODUCTION

Teachers are the main component of education. According to Kristiawan (2019), performance is a person's work ability which is manifested in the behavior that is manifested. The ability to understand behaving according to expectations can be interpreted as a work factor, high or low workability can be seen from what has been achieved and the achievements obtained in a job. According to Ratnani, Istiatin, and Sarsono (2021), teacher performance can be influenced by how much the teacher masters the competencies

needed to become an educator. The quality of education is good if the performance of a teacher is also good. Teacher performance can be seen when the teacher teaches in the classroom.

An important factor that needs to be considered to improve teacher performance is the development of teaching and learning strategies that are closely related, one of which is the availability of information technology, especially using the Internet, and the completeness of teaching and learning activities. In this regard, some studies highlight the importance of utilizing the Internet both teachers and students (Jatmika, Kusmawati, Suranto Rahmawati, and Setyawati, 2022; Suyatmini, Sari, and Jatmika, 2020; Syah, Janudin, and Mansor, 2022; Ulafatun, Septiyani, and Lesmana, 2021). According to Rachmijati (2018), it is stated that the use and use of the internet teachers as classroom managers must be able to direct students in accessing the internet because accessing the internet has positive and negative aspects. For learning to be following advanced technological developments, innovation is needed so that learning activities run well and effectively. In developing learning strategies, the existing information/internet technology must also be taken into account so that learning can be achieved optimally. Each individual's ability to use the internet is different. The sophistication of this technology is to improve teacher performance, one of which is by utilizing the internet which can store various and very wide sources of information, therefore if teachers use the internet for learning materials it will make it easier for them to achieve quality learning and achieve effectiveness in teaching. The advantages of using the internet in learning are that it allows learning all the time, utilizes existing technology, easy lesson updates, and makes students independent. Meanwhile, the disadvantage is that it requires students to adapt to new learning methods, using large costs.

Many teachers who teach at Jumantono State Vocational High School have used the internet as a medium for student learning, even though this school is still a rural school. In addition, the use of the internet will facilitate the interaction of teachers with students in learning. At Jumantono State Vocational High School all teachers have used the internet for teaching and learning activities well. However, there are still teachers who still have difficulty teaching using the internet. Teachers and students have implemented internet-based learning with the Problem-Based Learning method or which can also be called the problem-based learning method. By using the Problem-Based Learning method, Jumantono Vocational School has conducted learning by using classroom, google chrome, Schoology, quizzes, and so on since 2013, while semester exams have also been conducted on an internet-based basis for the last four years, starting in 2016.

According to Susanto, et al (2020) in terms of the learning process, pedagogic competence is the teacher's ability to manage student learning activities. Teachers who have pedagogic competence in curriculum development and the development of educational activities will produce a good performance in lesson planning. Meanwhile, according to Rusdiono, Harapan, and Wardah (2021) that if the pedagogic ability increases, it will have an impact on increasing teacher performance. Teachers who teach at Jumantono State Vocational High School are not all linear in teaching. This resulted in some teachers having difficulty mastering the learning process.

This study aims to determine the level of influence of internet use and pedagogical abilities on teacher performance. While the alternative hypotheses proposed are: (H1) The effect of internet use on teacher performance, (H2) The effect of pedagogic ability on teacher performance, and (H3) The effect of internet use and pedagogic ability on teacher performance.

METHOD

This study used a census design approach. The subjects of this study were a population of 68 teachers in Jumantono Vocational High School. The data were collected utilizing closed questionnaires. The dependent variable in this study is teacher performance (Y), while the independent variables are internet use (X1) and pedagogic ability (X2). The method of analysis in this study used multiple linear regression analysis, classical assumption test, hypothesis test there is t-test and F-test, coefficient of determination (R2), effective contribution and relative contribution and previously carried out validity and reliability tests, and classical assumption tests consisting of normality test and linearity test.

RESULT AND DISCUSSION

The results of this study were used to determine the use of the internet and pedagogical abilities significantly influence teacher performance by using a questionnaire. The results of the complete data analysis are as follows:

The validity test, based on the results of this test, the variables of internet use, pedagogic ability, and teacher performance showed that all items had an r-count greater than the r-table with a significant level of 5% (0.361), so all items used showed validly. Reliability test, the results of this test indicate Ralpha for the variables of internet use (0.941), pedagogic ability (0.902), and teacher performance (0.974). From this test, the variable has an r-alpha (Cronbach Alpha) > 0.5, so it is said that the variable has a high level of trust or is considered reliable.

Multiple regression analysis, this analysis is used to examine and test the effect of internet use and pedagogic ability on teacher performance. As for after doing data analysis using the SPSS 24 program, the results of multiple regression are shown in the following table:

TABLE 1
RESULTS OF MULTIPLE REGRESSION ANALYSIS AND CLASSICAL ASSUMPTION TEST

Dependent Variable (Y)	Independent Variable (X)	B	t-Count	Sig.	Standardized coefficient (β)	VIF	Residual Sig (2-tailed)
Teacher Performance	Use of the Internet	0,303	3,140	0,003	0,324	1,527	0,815
	Pedagogic capabilities	0,467	4,877	0,000	0,502	1,527	0,519
Constanta = 0,200							
R^2 = 0,548							
Adjusted R^2 = 0,534							
F-count = 39,427							
F Sig. = 0,000							
Kolmogorov-Smirnov Z Asymp. Sig. (2-tailed) = 0,200							

The results of the regression analysis show that internet use and pedagogical ability on teacher performance have a significance level of 0.003 or 0.3%. Internet use has a significant and positive effect on teacher performance. Pedagogic ability on teacher performance with a significance level of 0.000. The pedagogic ability has a significant and positive influence on teacher performance.

The F test was used to analyze whether all the independent variables included in the model could explain the related variables. With the SPSS 24 output, the F-count value is 39.427 at a significance level of 0.000, with a 95% confidence level or a = 0.05. Therefore, the two variables together proved to have a significant effect on teacher performance. While R square is used to determine how much influence the independent variable has on the dependent variable. Based on the results of the regression, it is known that the adjusted R square value is 0.534 so it can be interpreted that the variable of internet use and pedagogic ability affects the teacher's performance by 53.4%. while the remaining 46.6% is influenced by other variables.

A hypothesis test (t-test) was used to determine the effect of internet use and pedagogic ability on individual (partial) teacher performance, then a test or t-value t-test was carried out. The t-test was carried out based on the 5% significance level. The t-value of internet usage is 3,140 and pedagogic ability is 4,877. While the t table at a significance level of 5% = 1.997. The t-count value of internet use and pedagogic ability at the 5% level shows the effect of internet use and pedagogic ability on teacher performance. While the value of the t count is greater than the t table there is no influence of other variables on teacher performance.

Meanwhile, to test which independent variables dominantly affect teacher performance, it can be observed from the highest standardized coefficient value. Table 2 shows that the highest standardized coefficient value is the pedagogic ability variable of 0.467. This means that the increase in teacher performance is dominantly influenced by pedagogic abilities of 4.67%.

Since this research used multiple regression equation models, it must meet the requirements of the classical assumption test as follows:

The Kolmogorov-Smirnov test was used to see the normality of the data. Based on the acceptance, it can be said that the standardized value is well if the Asymp value. Sig (2-tailed) > a (alpha). While the calculation results show the Asymp value of 0.200 > 0.05 (alpha), the standardized value is said to be spread normally.

The multicollinearity test, based on the results of the coefficients table, can be seen in the output coefficients of the model, it is said that there are no symptoms of multicollinearity if the Variance Infusion Factor (VIF) value < 10. The calculation results produce a VIF value for the variables of internet use and pedagogical ability = 1,527, or all variables independent < 10. It can be concluded that there is no multicollinearity in the model.

The heteroscedasticity test, to test this, can be seen from the significance value of the Spearman Rank correlation between each independent variable and its residual. If the significance value is more than (5%) then there is no heteroscedasticity, and vice versa if it is less than (5%) then there is heteroscedasticity. The test results for the significance level resulted for the internet use variable 0.815 and the pedagogic ability variable 0.519 more than 0.05 or more than 5%. So, it can be concluded that there is no heteroscedasticity in the linear regression model.

The results of testing the hypothesis above have two implications, namely the teacher's performance on the use of the internet and the second, the teacher's performance on pedagogic abilities. The results of testing the hypothesis obtained multiple linear regression equation Y = a + b1X1 + b2X2, namely Y = 27.280 + 0.303 X1 + 0.467 X2.

The results of the first hypothesis test are known that the regression coefficient of the classroom management variable (X1) is 0.303 or a positive value, so it can be said that there is a positive influence of internet use on teacher performance. Based on the t-test for internet usage (X1), it was obtained that t-count > t-table was 3.140 > 1.997. Based on these conclusions, it can be said that the higher the use of the internet, the higher the teacher's performance, and vice versa, the lower the use of the internet, the lower the teacher's performance. In line with research conducted by Pratiwi (2021) stated that there is a positive and significant influence between internet use and teacher performance.

The use of the internet is very useful for teachers in providing learning for students. The advantage of e-learning or internet-based learning is that with the internet, the teacher will easily provide a lot of material or references to students without having to print them out. In addition, the teachers will not run out of ideas in providing material to students, and they are able to support their students to be more creative in the learning process. In short, the use of the internet or e-learning is very influential in increasing teacher performance in the classroom.

The results of the second hypothesis test are known that the regression coefficient of the pedagogic ability variable (X2) is 0.467 or a positive value, so it can be said that there is a positive influence of pedagogic ability on teacher performance. Based on the t-test for pedagogic ability (X2), it was obtained t-count > t-table, namely 4.877 > 1997. Based on this conclusion, it can be said that the higher the pedagogic ability, the higher the teacher's performance, and vice versa, the lower the pedagogical ability, the lower the teacher's performance. In line with research conducted by Ratnani, Istiatin, and Sarsono (2021) stated that there is a positive and significant influence between pedagogic abilities and teacher performance. This is shown from the results of the value of t count = 2,600 > t table = 2,020.

Professional teachers have good basic skills, can master learning materials, can master the circumstances of each class, and have loyalty to their duties. Teachers are required to have competencies that emphasize the mastery of sufficient knowledge and insight about the content of the subject matter, so as to create an effective learning process. If the teacher's competence covers everything, it can improve

their performance. The performance of a teacher is influenced by how much the teacher masters the competencies needed as an educator.

The results of the third hypothesis based on the multiple linear regression test or F test are known that the value of F-count > F-table is 39.427 > 3.14. This means that the use of the internet and pedagogic abilities together have a positive effect on teacher performance. The coefficient of determination (R2) test is used to find out what percentage of the influence of the independent variable on the dependent variable. Based on data analysis, the coefficient of determination (adjusted R2) is 0.534. The meaning of this coefficient is that the effect given by the combination of the variables of internet use and pedagogic ability together on teacher performance is 53.4%, while the remaining 46.6% is influenced by other variables not examined in this study.

The significance of this study is in line with research conducted by Pratiwi (2021); Istiningsih, Suyatno, and Widodo (2020) concluding that the majority of teachers agree that information technology helps increase their work productivity even during the pandemic which requires everyone to work from their respective homes. Aeni, Hanifah and Sunaengsi (2019) also prove that the use of internet technology can improve teacher competence and student morale. Abubakar and Salmanu (2018) conclude that the emergence of the internet has significantly changed all educational systems, and the proper use and retrieval of internet information will add to the value of education. And this research is in line with the research. The results of this study are in line with the research by Widodo (2021); Singerin (2021), which state that pedagogic competence can improve teacher performance. Aspects of pedagogic competence that must be possessed by teachers are educating and teaching must be able to understand the characteristics of students personally, and being able to understand theories in learning. A teacher with good competence can create educational learning activities. So, if the teacher masters and improves his pedagogical abilities, it will also increasingly affect their performance.

CONCLUSION

Based on the results of data analysis, it is proven that internet use and pedagogic abilities can improve teacher performance. The results of the t-test obtained that the variable of internet use has a significant effect on the performance of individual teachers. This proves the first hypothesis which states “There is an effect of internet use on teacher performance at Jumantono State Vocational High School.” The results of the t-test showed that the pedagogical ability variable had a significant effect on the performance of individual teachers. This proves the second hypothesis which states “There is an effect of pedagogic ability on teachers at SMK Negeri Juamantono.” The results of the F test showed that the variables of internet use and pedagogical ability affected teacher performance simultaneously. These results prove the third hypothesis which states there is an influence of internet use and pedagogical abilities on teacher performance in Jumantono State Vocational High School.

REFERENCES

Abubakar, H., & Salmanu, Y. (2018). Impact of internet technology usage on job performance of senior secondary school teacher in Kaduna State Nigeria. *International Journal of Curriculum and Instruction (IJCI), 10*(2), 152–167.

Aeni, A.N., Hanifah, N., & Sunaengsih, C. (2019). The impact of internet technology on teacher competence and student morality. *Journal of Physics: Conf. Series 1318*. doi:10.1088/1742-6596/1318/1/012046

Istiningsih, E., Suyatno, & Widodo. (2020). Academic supervision to improve teachers’ readiness in utilizing information and communication technology in vocational high schools. Universal *Journal of Educational Research, 8*(10), 4365–4373. https://doi.org/10.13189/ujer.2020.081002.

Jatmika, S., Kusmawati, V., Suranto, Rahmawati, D., & Setyawati, L. (2022). The Use of Mind Mapping as a Learning Delivery Medium for Business Entity Materials in a Vocational High School. *The International Journal of Technologies in Learning, 29*(2): 1-13. doi:10.18848/2327-0144/CGP/v29i02/1-13.

Kasiram. (2010). *Metode Penelitian: Kualitatif dan Kuantitatif*. Malang: UIN Maliki Press.

Kristiawan, M. (2019). Pengaruh Tunjangan Profesi dan Motivasi Kerja Terhadap Kinerja Guru. *Jurnal Manajemen Pendidikan, 6*(1).

Pratiwi, M.S. (2021). Pengaruh penggunaan teknologi informasi, motivasi kerja, dan kepuasan kerja terhadap kinerja guru SMA Negeri 82 Jakarta selama masa pandemi Covid 19. *Jurnal of Sustainable Comunity Development, 3*(2).

Rachmijati, C. (2018). Penggunaan internet sebagai optimalisasi media pembelajaran bahasa inggris. *Jurnal Pengabdian Kepada Masyarakat* (ABDIMAS) IKIP Siliwangi, *1*(2).

Ratnani, A.D., Istiatin, & Sarsono. (2021). Teacher performance reviewed from professional competencies, infrastructure facilities, motivation, and work discipline. *International Journal of Economics, Business and Accounting Research* (IJEBAR), *5*(3).

Rusdiono, B., Harapan, E., &Wardah, D. (2021). The Influence of pedagogical skill and professional competence in teachers performance of the teacher in primary public schools in Banyuasin I. *Advances in Social Science, Education and Humanities Research*, 565.

Singerin, S. (2021). The impact of academic supervision on teacher pedagogical competence and teacher performance: The role moderating by teacher efficacy. *International Journal of Elementary Education, 5*(3), 496–504.

Susanto, Ratnawati, Sofyan, dkk. (2020). Pemberdayaan kompetensi pedagogik berbasis kemampuan reflektif untuk peningkatan kualitas interaksi pembelajaran. *International Journal of Community Service Learning, 4*(2).

Suyatmini, Sari, D. E., & Jatmika, S. (2020). Blended learning in teacher professionalism training program (Ppg): A case study. *International Journal of Scientific and Technology Research, 9*(4), pp. 2267–2272.

Syah, M.F.J., Janudin, S.E., & Mansor, M. (2022). Confirmatory factor analysis (CFA) of the accounting teacher professional identity scale (ATPIS). *Jurnal Pendidikan Ilmu Sosial, 32*(2). doi: 10.23917/jpis.v32i2.20260

Triyanto, A., & Sudarwati. (2014). Pengaruh kompetensi dan penghargaan terhadap motivasi kerja karyawan PT. KAI di Stasiun Sragen. *Jurnal Paradigma, 12*(1).

Ulfatun, T., Septiyanti, F., & Lesmana, A.G. (2021). University Students' Online Learning Self-efficacy and Self-regulated Learning during the COVID-19 Pandemic. *International Journal of Information and Education Technology, 11*(12). doi: 10.18178/ijiet.2021.11.12.1570

Widodo, B. (2021). *Dampak kepemimpinan kepala sekolah, lingkungan kerja dan kompetensi pedagogik terhadap disiplin kerja guru SMA Muhammadiyah 1 Karanganyar* [Postgraduate thesis]. Retrieved from http://eprints.ums.ac.id/82065/2/2.%20NASKAH%20PUBLIKASI.pdf