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The Role of Innovation Using ICT in Mediating Learning Management and Performance to Improve Educational Quality at SMK Negeri 1 Pemalang

Sri Atminah[1]✉, Yuli Utanto[2]

[1, 2] Universitas Negeri Semarang

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Abstract

The research is based on the less than optimal learning and performance management system that causes low quality of education. The purpose of the study is to examine the influence of learning and performance management on the quality of education through innovation using ICT as a mediating variable. The population is teachers of SMK Negeri 1 Pemalang, sampling with stratified random sampling technique. From the Slovin formula obtained 55 respondents. Data collection method with questionnaires. Data analysis technique with path analysis, significance 5%. The results of the study: learning management has a positive and significant effect on the quality of education 69.0%. Performance management has a positive and significant effect on the quality of education 47.7%. Sobel Test Results: through mediation using ICT, learning management has a positive and significant effect on the quality of education 81.4% and performance management has a positive and significant effect on the quality of education 84.2%. Conclusion: learning and performance management has a positive and significant direct effect on the quality of education, the mediating role of innovation using ICT can increase the positive influence of learning and performance management on the quality of education.

✉Correspondence Address (author1):
Kampus Pascasarjana UNNES Jl. Lamongan Tengah No.2, Bendan Ngisor, Kec. Gajahmungkur, Kota Semarang
E-mail: atm125at@students.unnes.ac.id:

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INTRODUCTION

Law No. 20 of 2003 concerning the National Education System mandates that educational quality can be considered good or bad based on whether it meets national education standards. The prerequisite for improving educational quality can be seen from the fulfillment of minimum standards, including for educators and education personnel, as stipulated in Government Regulation No. 4 of 2022 concerning amendments to Regulation No. 57 of 2021 concerning National Education Standards.

The role of improving professionalism and educational quality in schools includes continuous quality improvement, which must be a strategy for enhancing the professionalism of education personnel in schools. It is hoped that this quality improvement strategy will have a direct impact on improving educational quality.

Improving the quality of education is achieved through the management of five key elements: management, computer and internet utilization in learning, performance, learning aids, and the involvement of teachers, students, parents, and stakeholders. Of these five, human resource management is crucial for achieving these goals, and therefore, its management is essential in schools.

Teachers, as the frontline educators who determine and influence the teaching and learning process and the quality of education in general, deserve attention based on their duties and responsibilities. However, it is important to recognize that as individuals, we all have differences, including physical characteristics, mindsets, and how we respond to change or new experiences.

These differences result in differences in performance. Research conducted by Martono (2023) states that innovation in completing work and improving human resources, which impact performance, can be triggered and driven by information technology. Meanwhile, Marin et al. (2021) state that innovation can mediate the relationship between ICT capabilities and performance.

To date, Information and Communication Technology (ICT) has made significant contributions to improvements in the social, economic, cultural, and educational sectors. It can be said that ICT has provided significant assistance in all aspects of life, enabling what were once considered difficult to resolve. ICT can be used in processing, managing, delivering information, and transferring information between media.

The use of ICT is expected to facilitate the sharing of knowledge, expertise in using technology, and so on, as an effort to encourage fellow teachers. Comfortable and coordinated working conditions will undoubtedly foster disciplined and responsible teacher performance. If performance and service are good, the quality of education is expected to improve.

ICT in learning can be utilized as: (1) learning presentation media, for example, in the form of PowerPoint slides and animations using Flash programs; (2) independent learning media or e-learning, such as assignments for students to read or search for sources on the internet, submit answers to assignments, and even try out and practice and study learning materials. Through e-learning, learning is no longer limited by space and time. (Ismaniati, 2008: 29)

Students can learn anytime and anywhere, thus encouraging them to analyze and synthesize knowledge, explore, process, and utilize information, and produce writing, information, and knowledge independently. By learning through e-learning, including e-books, e-libraries, interaction with experts, email, mailing lists, newsgroups, and so on, students are stimulated to explore knowledge. Furthermore, Siahaan (2010: 28) mentions the benefits of using ICT to support learning, including: (1) Improving the quality of learning (2) Expanding access to education and learning (3) Helping visualize abstract ideas (4) Facilitating understanding of the material being studied (5) Making learning materials more engaging (6) Allowing interaction between learning and the material being studied.

The use of ICT in learning has become a requirement today. With the rapid flow of information and diverse sources, teachers are no longer the sole source of learning. Because teachers play a strategic role, the use of ICT in schools should begin with them (Miarso, 2004: 494).

Therefore, efforts to improve performance are needed, with special attention being paid to improving the quality of education. Based on existing issues, all stakeholders have a responsibility to improve the quality of education. This is especially true for teachers, who are in direct contact with students during the learning process, and thus have significant duties and responsibilities. The responsibility for improving the quality of education in schools always falls on teachers. So, how prepared are these elements to improve the quality of the learning process? Based on this opinion, a paradigm shift is needed, implemented collaboratively between principals and teachers

in managing employee performance. Principals and teachers are expected to improve their performance.

Based on this existing phenomenon, there is a significant need for innovation using ICT that can bridge the gap between learning management and performance management to improve the quality of education at SMK Negeri 1 Pemalang. Therefore, the author was interested and motivated to conduct research on "The Role of Innovation Using ICT in Mediating Learning Management and Performance to Improve the Quality of Education at SMK Negeri 1 Pemalang."

Based on the background of the problem described above, the research question in this study is "How can innovation using ICT mediate learning management and performance, thereby improving the quality of education?" The research question is as follows: Is innovation using ICT capable of mediating learning management and performance to improve the quality of education?

The scope of the research problem is limited to innovation using ICT, learning management, and performance management to improve the quality of education at SMK Negeri 1 Pemalang, Pemalang Regency, as follows: 1) Learning management in this study refers to managing learning using ICT to improve the quality of learning through learning activities and digital skills. 2) Performance management refers to the management of the school's teaching staff, performance evaluations that monitor and improve employee performance, and employee training and development to enhance performance. 3) The quality of education refers to compliance with established management standards. 4) Innovation using ICT refers to the use of ICT to manage teacher learning and performance.

The research question is: Is innovation using ICT able to mediate learning management and performance management to improve the quality of education?

The objectives of this research, based on the above problem formulation, are to describe and analyze the role of innovation using ICT in learning management and performance management in improving the quality of education.

Quality education is the future goal of the Indonesian nation. "Quality" means a measure of the goodness or badness of something, quality, level, or degree (skill, intelligence) (KBBI WJS Poewadarminta, 2003:788). The overall description and characteristics of goods or services that demonstrate their ability to satisfy expected needs are referred to as quality. In the context of education, the definition of quality encompasses educational input, process, and output (S Joremo Arcaro, 2005:8). According to Rusman (2009:555), the process and outcomes of quality education are interconnected, so that Quality in terms of results (output) must be formulated in advance by the school and the targets to be achieved each year or other period must be clear.

Quality education is education that produces graduates with abilities or competencies, both academic and vocational, based on personal and social competencies, as well as noble moral values, all of which constitute life skills. Education that produces complete human beings (perfect humans) or individuals with integrated personalities, those who are able to integrate faith, knowledge, and good deeds (Hari Suderadjat, 2005:7).

Based on the opinions and descriptions above, it can be concluded that the quality of education is a pillar for developing human resources (HR). The future of the nation lies in the quality of education. Quality education will be realized if there is good school management. The quality of education is also a measure of the success of educational services. Therefore, realizing quality education is crucial as an effort to improve the future of the nation and as a product of educational services.

The main factors for improving the quality of education according to Sudarwan Danim (2007:56), said that if an institution wants to improve the quality of its education, it must involve at least five dominant factors, namely: 1) Principal Leadership: having and understanding a clear work vision, being able

and willing to work hard, having a high work motivation, being diligent and steadfast in working, providing optimal service, and strong work discipline are what a principal must have; 2) Teachers: maximum teacher involvement in learning, and always improving their work competencies and professions through seminars, workshops. Then the results of the training are applied in schools; 3) Students: through the "child as the center" approach, students' competencies and abilities can be explored so that schools can inventory the strengths that exist in students; 4) Learning: through a consistent, dynamic, and integrated curriculum, the expected quality standards can be realized so that school goals can be achieved optimally; 5) Cooperation Network: through a wider cooperation network not only with the community and parents, but with the business world, the industrial world, or government agencies so that it can absorb the school's output workforce (graduates).

Regarding education quality management, there are three management standards: 1) management standards by educational units, 2) management standards by regional governments, and 3) management standards by the central government (PP No. 19, 2005:35).

According to Permendikbudristek No. 47 of 2023 concerning Education Management Standards, education management includes: 1) Program planning: consisting of formulating and establishing the school's vision, mission, objectives, and work plan; 2) Implementation of the work plan: schools create and maintain written guidelines that regulate various aspects of management, establish the school's organizational structure, and carry out school activities; 3) Supervision and evaluation: assessment of learning outcomes by educators, assessment of learning outcomes by educational units, and assessment of learning outcomes by the government. Educational assessment includes attitude assessment, knowledge assessment, and skills assessment.

According to Cepi Triatna, the quality of educational services can be categorized based on outcomes, processes, and inputs (Cepi Triatna, 2015: 15).

The three qualities of educational services can be explained as follows:

1) The quality of educational outcomes as perceived by students through the learning process.
2) The quality of processes as perceived by students as comfortable with the learning services.
3) The quality of inputs as seen from various inputs into the learning process, including curriculum, facilities, students, and other contributing factors (Cepi Triatna, 2015: 53).

According to Mulyasa, the definition of quality according to the Ministry of National Education encompasses the following three elements:

1) Educational Input

Educational input is everything in the form of resources, software, and expectations for the process. Resource input includes the principal, teachers, school staff, and students. Input software includes the school's organizational structure and laws and regulations. Expected input can include the school's vision, mission, and goals. The readiness of these inputs is essential for the process to proceed smoothly. The quality of these inputs can be measured by the level of input readiness. In other words, the higher the input readiness, the higher the quality of the input (E. Mulyasa, 2011: 157).

2) Educational Process

A process is considered high-quality when the coordination, harmonization, and integration of school inputs are carried out harmoniously, creating a pleasant learning environment that fosters motivation and interest in learning, and empowers students. The process can be said to be high-quality.

3) Educational Output

A school's output is considered high-quality if its performance, specifically student achievement, demonstrates high levels of achievement in:

a) Academic achievement, in the form of general test scores, final exam scores,

scientific papers, and academic competitions.

b) Non-academic achievement, such as faith and piety (Imtaq), honesty, politeness, sports, the arts, vocational skills, and other extracurricular activities (Husaini Usman, 2013: 157-158).

The principal's efforts to achieve educational quality are carried out through several interconnected activities, such as planning, implementation, and supervision. These efforts can be carried out by considering the components of educational quality and the characteristics of a quality school, thereby achieving quality education.

Donbesuur et al. (2020) describe innovation as the application of new knowledge to develop new processes, services, and products. Jong (2000) argues that innovation is the successful development and implementation of a new or improved product, service, work process, or condition, aimed at gaining a competitive advantage. Innovation must be a replicable idea and must meet a desired need. In its application, innovation involves information, imagination, and deliberate initiative to obtain greater or different value from resources and encompasses all processes by which new ideas are generated and transformed into useful products. According to Permana (2019), innovation often arises when ideas are implemented to meet customer needs and expectations.

METHOD

This research is explanatory, meaning it explains the relationships between variables. The variables in this study include: Learning Management, Performance Management, Innovation Using ICT, and Educational Quality.

The population in this study was 123 educators (teachers) at SMK Negeri 1 Pemalang. The Slovin formula was used to determine the sample size. The sample size calculation assumed a 10% error rate and a 90% confidence level, resulting in a sample size of 55 respondents.

Learning Management (X1) and Performance Management (X2) were selected as independent variables, while educational quality (Y) was selected as the dependent variable. Innovation using ICT (Z) was also an independent variable to examine how innovation affects educational quality.

The hypotheses that emerged were:

1) Hypothesis 1: Learning management has a positive and significant effect on the quality of education at SMK Negeri 1 Pemalang.
2) Hypothesis 2: Performance management has a positive and significant effect on the quality of education at SMK Negeri 1 Pemalang.
3) Hypothesis 3: Learning management has a positive and significant effect on innovation using ICT at SMK Negeri 1 Pemalang.
4) Hypothesis 4: Performance management has a positive and significant effect on innovation using ICT at SMK Negeri 1 Pemalang.
5) Hypothesis 5: Innovation using ICT has a positive and significant effect on the quality of education at SMK Negeri 1 Pemalang.
6) Hypothesis 6: Innovation using ICT strengthens the positive effect of learning management on the quality of education at SMK Negeri 1 Pemalang.
7) Hypothesis 7: Innovation using ICT strengthens the positive effect of performance management on the quality of education at SMK Negeri 1 Pemalang.

Data collection was conducted through a questionnaire using interval measurement with a score of 1 (strongly disagree), 2 (disagree), 3 (less agree), 4 (agree), and 5 (strongly agree).

The data sources consisted of primary and secondary data. Primary data is data obtained directly from the subject through a survey. Primary data includes: learning management, performance management, innovation using ICT, and educational quality. Secondary data is various pre-existing information intentionally collected by the researcher, used to supplement the research data requirements, including ASN data, grades, and educational report card data.

The data collection technique in this study involved distributing questionnaires to respondents on sheets of paper, which were then given to each respondent to answer.

To ensure the validity of the instrument used, this study conducted a pilot test using a pilot test. This means that after all samples were collected, the validity and reliability of each instrument were calculated. The data were collected from 55 teacher respondents at SMK Negeri 1 Pemalang.

The data analysis techniques in this study used two techniques: descriptive statistical analysis and inferential statistical analysis. According to (Sugiyono, 2019), data analysis techniques in quantitative research use descriptive statistical analysis with the help of SPSS 22.0 or Microsoft Excel. These include: 1) Assumption testing (normality test, multicollinearity test, heteroscedasticity test); 2) Path analysis; 3) Sobel test: The mediation hypothesis can be tested using a procedure known as the Sobel test (Ghozali, 2019). The Sobel test is conducted by examining the strength of the indirect influence of the independent variable on the dependent variable through the mediating variable

Path analysis is used to determine the magnitude of the influence of one variable on another, both direct and indirect. The steps for conducting data analysis using path analysis, while the magnitude of the influence of the independent variable on the dependent variable is called the path coefficient.

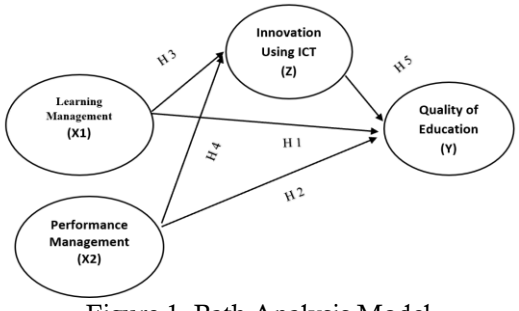

Figure 1. Path Analysis Model

Hypothesis testing in research includes direct effect hypothesis testing and indirect effect hypothesis testing. Direct effect is the influence of an independent variable on a dependent variable. The magnitude of the direct effect of an independent variable on a dependent variable is determined based on the regression coefficient. The direct effect in research is used to test Hypotheses 1, 2, 3, 4, and 5, and the indirect effect is used to test Hypotheses 6 and 7.

Tests are conducted using a t-test by observing and interpreting the p-value or sig. The correlation coefficients of variables learning management, performance management and innovation using ICT against educational quality and learning management, performance management against innovation using ICT Z. If the p-value or significance value is <0.05, the direct effect is considered significant, meaning the hypothesis is accepted. Conversely, if the p-value or significance value is >0.05, the direct effect is considered insignificant, meaning the hypothesis is rejected.

An indirect effect is the effect of an independent variable on a dependent variable that occurs through a mediating variable. The magnitude of the indirect effect of an independent variable on the dependent variable is determined by multiplying the path coefficient of the independent variable by the intervening/mediating variable. To test the significance of the indirect effect of the mediating variable innovation using ICT for learning management on educational quality, the mediating variable innovation using ICT for performance management on educational quality is conducted using the Sobel test. The Sobel test is performed using an online calculator.

The indirect effect is conducted to test hypotheses 5 and 6. The indirect effect is measured using the Sobel test by entering the path coefficients of learning management and performance management on innovation using ICT, the path coefficient of innovation using ICT on educational quality, and the standard error value of the regression of variable innovation using ICT on educational quality into the Sobel test calculator. The Sobel test will then display the p-value. If the value is less than 0.05%, the mediating effect of innovation using ICT for learning management and performance

management on educational quality is considered significant. Conversely, if the p-value of the Sobel test is greater than 0.05, the mediating effect of innovation using ICT for learning management and performance management on educational quality is considered insignificant.

RESULTS AND DISCUSSIONS

RESULTS

1. Results of Descriptive Variable Analysis

The results of the descriptive analysis, according to SPSS, regarding the variables of learning management (X1), performance management (X2), innovation using ICT (Z), and education quality (Y), are as follows:

a) Description of Education Quality (Y)

Based on the education quality indicators, respectively, 85.45% were very good, 14.55% were good, 0.00% were fair, 0.00% were poor, and 0.00% were poor. The mean value for the education quality variable was 54.25, which falls within the very good criteria ($50.4 < x \leq 60$). The conclusion from the calculation is that the quality of education at SMK Negeri 1 Pemalang is very good.

b) Description of Learning Management (X1)

Based on the learning management indicators, the scores were: very good (56.36%), good (27.27%), fair (16.37%), poor (0.00%), and poor (0.00%). The mean value for the learning management variable was 50.27, which falls within the good criteria of $40.8 < x \leq 50.40$. The calculation concludes that the learning management of SMK Negeri 1 Pemalang is good.

c) Description of Performance Management (X2)

Based on performance management indicators, the scores were: very good at 56.36%, good at 29.09%, fair at 14.51%, poor at 0.00%, and poor at 0.00%. The mean value for the performance management variable was 38.42, falling within the range of $37.8 < x \leq 45$, within the very good criteria. The calculation concludes that the performance management of SMK Negeri 1 Pemalang is good.

d) Description of Innovation Using ICT (Z)

Based on innovation indicators using ICT, the scores were very good at 54.54%, good at 32.73%, fair at 12.73%, poor at 0.00%, and poor at 0.00%. The mean value for the ICT innovation variable is 38.71, which falls within the range $37.8 < x \leq 45$, within the very good criteria. The calculation concludes that the ICT innovation of SMK Negeri 1 Pemalang is very good.

2. Classical Assumption Test Results

a) Normality Test Results

The normality test results in the Kolmogorov-Smirnov test result table indicate that the significance level of 0.200 is met, as the Kolmogorov p-value is greater than 0.05. The tested data are normally distributed, meaning that the number of questionnaires administered to each element in the sample is proportional.

b) Multicollinearity Test Results

The multicollinearity test aims to determine whether a correlation exists between independent variables in the regression model. A good regression model should have no correlation between independent variables. Multicollinearity can be detected by calculating the Variance Influence Factor (VIF) and tolerance value. If the VIF is less than 10 and the tolerance value is greater than 0.1, the regression is free from multicollinearity. The results of the multicollinearity test using SPSS 22.0 software are as follows: the VIF value for each variable is less than 10 and the tolerance value exceeds 0.10, indicating that there is no multicollinearity between the independent variables.

c) Heteroscedasticity Test Results

The heteroscedasticity test aims to determine whether a regression model exhibits unequal residual variances between observations. A good model is one that does not exhibit heteroscedasticity. The results of the Glejser test using SPSS 22.0 software are as follows: showing that none of the independent variables are statistically significant in influencing the dependent variable, the abresid value can be seen from the probability value (sig)

above 0.05 (sig > 0.05), so it is concluded that there is no heteroscedasticity.

3. Path Analysis Results

Path analysis was conducted to test the path diagram in Figure 1. The following are the results of the multiple linear regression analysis processed using SPSS 22.0 software.

a. Analysis of the Effect of Learning Management, Performance Management, and Innovation Using ICT on Educational Quality

The adjusted R-square test results were 0.859, indicating that 85.9% of the variation in the Educational Quality variable can be explained by variations in Learning Management, Performance Management, and Innovation Using ICT. The remaining 14.1% is due to other influences outside the research model.

b. Analysis of the Effect of Learning Management and Performance Management on Innovation Using ICT

The adjusted R-square test results were 0.430, indicating that 43.0% of the variation in the Innovation Using ICT variable can be explained by variations in Learning Management and Performance Management. The remaining 57% is due to other influences outside the research model. The path coefficient value of the regression results can be used to determine the direct influence, indirect influence and total influence of the independent variable on the dependent variable which is described by the following path diagram model:

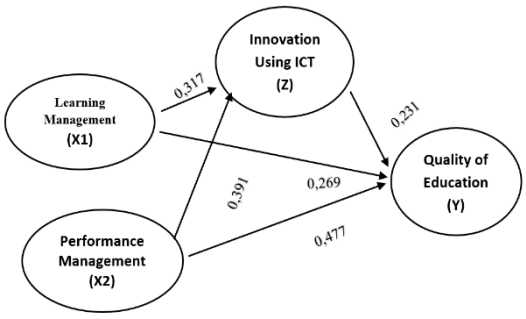

Figure 2 Path Diagram

Figure 2 shows the direct effect, indirect effect, and total effect of each variable:

1) Direct effect of X1 on Y = 0.269
2) Direct effect of X2 on Y = 0.477
3) Direct effect of X1 on Z = 0.317
4) Direct effect of X2 on Z = 0.391
5) Direct effect of Z on Y = 0.231
6) Indirect effect of X1 on Y = pZX1 x pYZ = 0.317 x 0.231 = 0.073
7) Indirect effect of X2 on Y = pZX2 x pYZ = 0.391 x 0.231 = 0.090
8) Total effect of X1 on Y = 0.269 + 0.073 = 0.342
9) Total effect of X2 on Y = 0.477 + 0.090 = 0.567

4. Sobel Test Results

The mediation value of variable Z for X1 on Y and the mediation value of variable Z for X2 on Y were tested using a Sobel test. The Sobel test was conducted using an online Sobel test calculator. The results are as follows:

a. The Effect of Learning Management on Educational Quality through Innovation Using ICT as a Mediating Variable.

The results of the Sobel Test for Learning Management on Educational Quality through Innovation Using ICT indicate that the Sobel statistical mediation value of innovation using ICT for the learning management variable (X1) on educational quality is 1.75571517 with a one-tailed probability value of 0.03956853 at a significance level of <0.05.

b. The Effect of Performance Management on Educational Quality through Innovation Using ICT as a Mediating Variable

The Sobel test results for Performance Management on Educational Quality through Innovation Using ICT show that the Sobel statistical mediation value for innovation using ICT for the performance management variable (X2) on educational quality is 2.24832264, with a one-tailed probability value of 0.01227781 at a significance level <0.05.

5. Hypothesis Test Results

a) Hypothesis 1: The Effect of Learning Management on Educational Quality

Shows a t-test of 2.489 with a path coefficient of 0.269, significant at the 0.000 level. This result is less than the significance limit of 0.05, indicating a direct positive effect of

learning management on educational quality of 26.9%. Therefore, Ha is accepted and Ho is rejected. Therefore, H1, which states that there is a direct effect of learning management on educational quality, is accepted.

b) Hypothesis 2: The Effect of Performance Management on Educational Quality

Shows a t-value of 4.057 with a path coefficient of 0.477, significant at the 0.000 level. This result is less than the 0.05 significance limit, indicating a direct positive effect of performance management on educational quality of 47.7%. Therefore, Ha is accepted and Ho is rejected. Therefore, H1, which states there is a direct effect of performance management on educational quality, is accepted.

c) Hypothesis 3: The Effect of Learning Management on Innovation Using ICT

Shows a t-value of 2.126 with a path coefficient of 0.317, significant at the 0.011 level. This result is less than the 0.038 significance limit, indicating a direct positive effect of learning management on innovation using ICT of 31.7%. Therefore, Ha is accepted and Ho is rejected. Therefore, H1, which states there is a direct effect of learning management on innovation using ICT, is accepted.

d) Hypothesis 4: The Effect of Performance Management on Innovation Using ICT

Shows a t-value of 2.627 with a path coefficient of 0.391, indicating significance at the 0.011 level. This result, being less than the 0.05 significance level, indicates a direct positive effect of performance management on innovation using ICT, amounting to 39.1%. Therefore, Ha is accepted and Ho is rejected. Therefore, H1, which states that there is a direct effect of performance management on innovation using ICT, is accepted.

e) Hypothesis 5: The Effect of Innovation Using ICT on Educational Quality

Shows a t-test of 2.293 with a path coefficient of 0.231, indicating significance at the 0.026 level. This result is less than the 0.05 significance limit, indicating a direct positive effect of innovation using ICT on educational quality of 23.1%. Therefore, Ha is accepted and Ho is rejected. Therefore, H1, which states that there is a direct effect of performance management on educational quality, is accepted.

f) Hypothesis 6: The Role of Innovation Using ICT as a Mediator in the Effect of Learning Management on Educational Quality

Shows that the t-value for learning management is 2.489 with a path coefficient of 0.690, significant at the 0.016 level. This result is less than the 0.05 significance level. Meanwhile, Table 4.23 shows that the t-value for mediation through innovation using ICT is 4.245 with a path coefficient of 0.427, significant at the 0.000 level. This result is less than the 0.05 significance level. Therefore, H6, which states that learning management through innovation using ICT as a mediator in educational quality, is accepted because it has a positive effect.

The indirect effect value is obtained from the path coefficient pZX1 x pYZ = 0.317 x 0.231 = 0.073. The multiplication result indicates that the coefficient value has an indirect effect (0.073 < 0.317). Based on the Sobel test results in Figure 4.6, the Sobel test results were 1.75571517, and it can be concluded that Ha is accepted. This means that innovation using ICT plays a role in mediating the influence of learning management on educational quality.

g) Hypothesis 7: The Role of Innovation Using ICT as a Mediator of the Effect of Performance Management on Educational Quality

Table 4.17 shows that the t-value for performance management is 4.057 with a path coefficient of 0.477, significant at the 0.000 level. This result is less than the 0.05 significance limit. Table 4.26 shows that the t-value for mediation of innovation using ICT is 3.037 with a path coefficient of 0.306, significant at the 0.004 level. This result is less than the 0.05 significance limit. Therefore, H7, which states that there is a positive effect of performance management through innovation using ICT as a mediator on educational quality, is accepted.

The indirect effect value is obtained from the path coefficient pZX2 x pYZ = 0.391 x 0.231 = 0.090. The multiplication result indicates that the coefficient value has an indirect effect (0.090 < 0.391). Based on the Sobel test results in Figure

4.7, the Sobel test results were found to be 2.24832264, it can be concluded that Ha is accepted. This means that there is a role for innovation using ICT as a mediator in the influence of performance management on educational quality.

DISCUSSION

From the initial research test, based on the theoretical analysis presented, it can be hypothesized that the quality of education is influenced by learning management and performance management. The results of the hypothesis testing calculations indicate that all hypotheses are significant. Thus, this study has successfully demonstrated the influence of learning management (X1) and performance management (X2) on the quality of education (Y) through innovation using ICT (Z). This hypothesis can be explained as follows:

a. The Direct Effect of Learning Management on Educational Quality

The results of statistical tests indicate that learning management has a direct effect on educational quality, with a linear regression coefficient of 26.9%. Based on the multiple linear regression analysis, the calculated t-value for learning management is 2.489, with a significance level of 0.016 <0.05. This indicates that the calculated t-value is greater than the t-table value (2.489>1.675), where the t-table is obtained using the formula α = 5%, df = N-k-1 = 55-2-1 = 52, or 1.675. Therefore, the hypothesis is accepted: learning management has a positive and significant effect on educational quality at SMK Negeri 1 Pemalang. Therefore, Ho is rejected and H1 is accepted.

Therefore, this study demonstrates a positive and significant direct effect between learning management and educational quality. The results of this analysis also indicate that better learning management improves educational quality, and vice versa. Poor learning management directly impacts educational quality at SMK Negeri 1 Pemalang.

b. The Direct Effect of Performance Management on Educational Quality

The results of statistical tests indicate that performance management has a direct effect on educational quality, with a linear regression coefficient of 47.7%. Based on the multiple linear regression analysis, the calculated t-value for performance management is 4.057, with a significance level of 0.000 <0.05. This indicates that the calculated t-value is greater than the t-table value (4.057>1.675), where the t-table is obtained using the formula α = 5%, df = N-k-1 = 55-2-1 = 52, which is 1.675. Therefore, the hypothesis is accepted: performance management has a positive and significant effect on educational quality at SMK Negeri 1 Pemalang. Therefore, it is concluded that Ho is rejected, and H1 is accepted.

c. The Direct Impact of Innovation Using ICT on Educational Quality

The results of statistical tests indicate that innovation using ICT has a direct impact on educational quality, with a linear regression coefficient of 23.1%. Based on the multiple linear regression analysis, the calculated t-value for innovation using ICT is 2.293, with a significance value of 0.000 <0.05. This indicates that the calculated t-value is greater than the t-table value (2.293>1.675), where the t-table is obtained using the formula α = %%, df = N-k-1 = 55-2-1 = 52, which is 1.675. Therefore, the hypothesis is accepted: innovation using ICT has a positive and significant impact on educational quality at SMK Negeri 1 Pemalang. Therefore, it is concluded that Ho is rejected, and H1 is accepted.

This means that good innovation using ICT includes continually increasing knowledge, keeping up with the latest technology, exploring ICT, and making breakthroughs in ICT innovation, all of which can improve the quality of education. Clearly, innovation using ICT at SMK Negeri 1 Pemalang is being implemented effectively.

d. The Effect of Learning Management on Innovation Using ICT

The results of statistical tests indicate that learning management has a direct influence on innovation using ICT with a linear regression coefficient of 31.7%. Based on the multiple linear

regression analysis, the calculated t-value for innovation using ICT is 2.126 with a significance value of 0.000 <0.05. This indicates that the calculated t-value is greater than the t-table value (2.126>1.675), where the t-table is obtained using the formula α = 5%, df = N-k-1 = 55-2-1 = 52, which is 1.675. Therefore, the hypothesis is accepted: innovation using ICT has a positive and significant effect on the quality of education at SMK Negeri 1 Pemalang. Therefore, it is concluded that Ho is rejected, and H1 is accepted. This means that good learning management can improve innovation using ICT. Clearly, learning management at SMK Negeri 1 Pemalang is being implemented well.

e. The Effect of Performance Management on Innovation Using ICT

Statistical test results indicate that performance management has a direct influence on innovation using ICT, with a linear regression coefficient of 39.1%. Based on the multiple linear regression analysis, the calculated t-value for innovation using ICT is 2.627, with a significance value of 0.000 <0.05. This indicates that the calculated t-value is greater than the t-table value (2.627>1.675), where the t-table is obtained using the formula α = 5%, df = N-k-1 = 55-2-1 = 52, which is 1.675. Therefore, the hypothesis is accepted: innovation using ICT has a positive and significant effect on the quality of education at SMK Negeri 1 Pemalang. Therefore, it is concluded that Ho is rejected, and H1 is accepted. This means that good performance management can increase innovation using ICT.

f. The Role of Innovation Using ICT in Mediating the Effect of Learning Management on Educational Quality

The Sobel test for the learning management variable mediated by innovation using ICT showed a statistical value of 3.9103511 with a p-value of 0.00009216, indicating that innovation using ICT has an impact on educational quality. The results showed a path coefficient pointing to the role of innovation using ICT as a mediator of the effect of learning management on educational quality of 0.427. The r-square test was 0.814, or 81.4.8%. This means that innovation using ICT plays a role in strengthening the effect of learning management on educational quality by 81.4%. Therefore, hypothesis 6 is accepted: innovation using ICT strengthens the positive influence of learning management on educational quality at SMK Negeri 1 Pemalang.

This means that good learning management and innovation using ICT can improve educational quality. Clearly, innovation using ICT at SMK Negeri 1 Pemalang is being implemented effectively.

g. The Role of Innovation Using ICT in Mediating the Effect of Performance Management on Educational Quality

The Sobel test for the performance management variable mediated by innovation using ICT showed a statistical value of 2.91569509 with a p-value of 0.00354897, indicating that innovation using ICT and innovation using ICT influence educational quality. The results showed a path coefficient pointing to the role of innovation using ICT as a mediator of the effect of performance management on educational quality of 0.306. The r-square test result was 0.842, or 84.2%. This means that innovation using ICT plays a role in strengthening the effect of performance management on educational quality by 84.2%. Therefore, hypothesis 7 is accepted: innovation using ICT strengthens the positive influence of performance management on educational quality at SMK Negeri 1 Pemalang.

This means that effective performance management and innovation using ICT can improve educational quality. Clearly, innovation using ICT at SMK Negeri 1 Pemalang is being implemented effectively.

CONCLUSION

Based on the results, learning management and performance management have a positive and significant effect on both educational quality and innovation through the use of ICT at SMK Negeri 1 Pemalang. Improved learning and performance management promote greater ICT-based

innovation, which subsequently enhances the quality of education. Furthermore, ICT-based innovation serves as a mediating variable that strengthens the relationship between learning management, performance management, and educational quality. Therefore, effective management practices supported by ICT innovation play an essential role in improving the overall quality of education at SMK Negeri 1 Pemalang.

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