

The Teacher's Role, Learning Resources and Media Effect toward Student Innovativeness of Public Vocational High School (SMKN) in Solok Regency

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Abstract

The purpose of this study is to clarify the factors that influence on student innovativeness in XI year of Public Vocational High School (SMKN) in Business and Management Skills in Solok. This type of research is descriptive quantitative and correlation with a total sample of 181 respondents. The sampling technique used a proportional random sampling. The research data was collected using a questionnaire in the Likert scale. Data analyzed using Structural Equation Modeling (SEM) by Smart PLS 3 program. The results show that: 1) there is a positive and significant effect between the teacher's role on the availability of learning resources. 2) there is no effect between the teacher's role on the use of learning media. 3) there is a positive and significant effect between the availability of learning resources on the use of learning media. 4) there is no effect between the teacher's role on student's innovativeness. 5) there is a positive and significant effect between the availability of learning resources on student's innovativeness. 6) there is a positive and significant effect between the use of learning media on student's innovativeness.

Keywords: teacher's role, availability of learning resources, use of learning media, student's innovativeness

Introduction

The challenge of the younger students for today is finding jobs with the increasingly fierce competition. The government needs to review the relevance of education and employment to respond to the challenges and opportunities in this digital era. In addition, opportunities in the digital era encourage sustainable innovation. To win the competition, every country including Indonesia must have a quality of human resources. The results on the quality of student innovations in Siberia show that the level of student innovation is at the medium level (Kistova, et.al, 2015). Students have a great opportunity to participate in developing the economy by preparing themselves to fill employment opportunities in the business and industry.

Vocational High School (SMK) is an integrated part of the national education system which has an important role in preparing students to enter the workforce. Vocational schools are equipped with knowledge and expertise, including entrepreneurial learning. Entrepreneurship learning must be able to change the mindset of students as stated by Kasmir (2006). The employee-oriented mindset is changed to employee-oriented. According to Sutrisno, entrepreneurship learning applies principles and methodologies for the formation of life skills for students through an integrated and developed curriculum in schools (Wibowo, 2011: 113).

The character of innovation is central and the main focus in entrepreneurship learning so it must be relevant to the needs, problems and potential of the surrounding resources (Murwani, 2016: 14). According to Sun, students' innovative abilities have become a necessity for developing countries, community needs and time needs (Safeng, et.al 2013). Xu and Chen (2010) also state that with increasing

international competition, ways to develop and enhance students' innovative abilities are always done through educational institutions.

Gabor revealed innovation is the process of turning an invention into a marketable product (Ahmed, et.al 2010: 15). Furthermore, Bird argues that innovation is more than an invention, but also involves the commercialization of ideas, implementation, and modification of existing products, systems, and resources (Ahmed, et.al 2010). Chen also stated that innovation is the ability and tendency to think creatively and develop new and practical ideas related to the recognition of opportunities, resource use and problem-solving (Akmaliah, et.al 2014). From some of the statements above it was concluded that the innovativeness of students in this study was a number of attitudes that directed students to produce innovation and be involved in the innovation process. Students who believe that the entrepreneurial profession is the choice of work after completing their studies, they must produce works with the innovations they have.

The efforts that can be done in Solok Vocational School in improving student innovation are through the good role of entrepreneurship subject teachers in schools. The role of the teacher is very important in achieving student learning success. The teacher is expected to be able to perform his role well so that an effective learning process occurs. The role of the teacher in this study is the involvement of teachers in the process of entrepreneurship learning that can improve student innovation. The teacher's role is measured by using indicators as demonstrators, as mediators, as role models, as advisors, and as evaluators. The research findings of Aichouni et al. (2015) and Kurjono (2011) found that the teacher's role had a positive effect on students' innovative abilities. Based on observations made in several classes, it was found that some teachers had not used a learning model that could activate students' potential such as, not providing opportunities for students to convey ideas or ideas, this made it difficult for students to practice creative and innovative thinking skills, and teachers had not used varied learning methods.

Another factor that influences student innovation is the availability of learning resources. Learning resources are tools that can be used as tools to achieve learning goals and objectives. Learning resources are the main support for the implementation of the teaching and learning process because it contains information/material that students will learn. The availability of learning resources in this study is the adequacy of all types of learning resources that contain subject matter when learning takes place. The availability of learning resources is measured using indicators of reading material and resource persons. The results of Fulgence's study (2015) in Germany showed that the availability of learning resources had a positive effect on students' innovativeness. Setiyani (2010) also revealed the same research results. Observations about the availability of learning resources in Solok Vocational High School have also been conducted, it was found that learning resources in the form of reading material were sufficient. This is evidenced by the availability of various books with various references in the library, but for the availability of learning resources in the form of learning practitioners (resource persons) are rarely fulfilled. The main purpose of the teaching and learning process is to bring significant changes in student behavior to active participation and critical thinking. Afework and Asfaw argue that this cannot happen without the availability of learning resources (Lyimo, et.al 2017). The availability of complete learning resources makes it easy for students to get diverse material so that their creativity and innovation increase.

In addition, the use of learning media is an important thing that influences student innovation. Media is a tool used in conveying or conveying teaching messages (Arsyad, 2010: 3). The use of learning media in this research is how in theory and practice a media is used for learning purposes. The use of learning media is measured by indicators of print media and electronic media. The level of utilization of high learning media is only found in high-performance schools. This school usually produces students who are creative and innovative. This shows that the level of student innovation is influenced by the least amount of media use. Ansarullah and Ristiliana (2014) revealed that there was a positive and significant

influence between the use of instructional media on student innovativeness. The results of Lazarus's study (2016) also found similar results.

Based on the gap theory and research results that have been described, it becomes an opportunity to develop science, especially in the field of education, for that researchers are interested in conducting research on the influence of teachers' role, the availability of learning resources and the use of learning media on students' innovativeness SMKN Solok Regency. This study has several objectives. The first objective is to discuss student innovativeness based on relevant studies. In addition, this is also information to develop students' innovative abilities. The second objective is to clarify the factors that influence student innovativeness based on the conceptual framework of the study as follows:

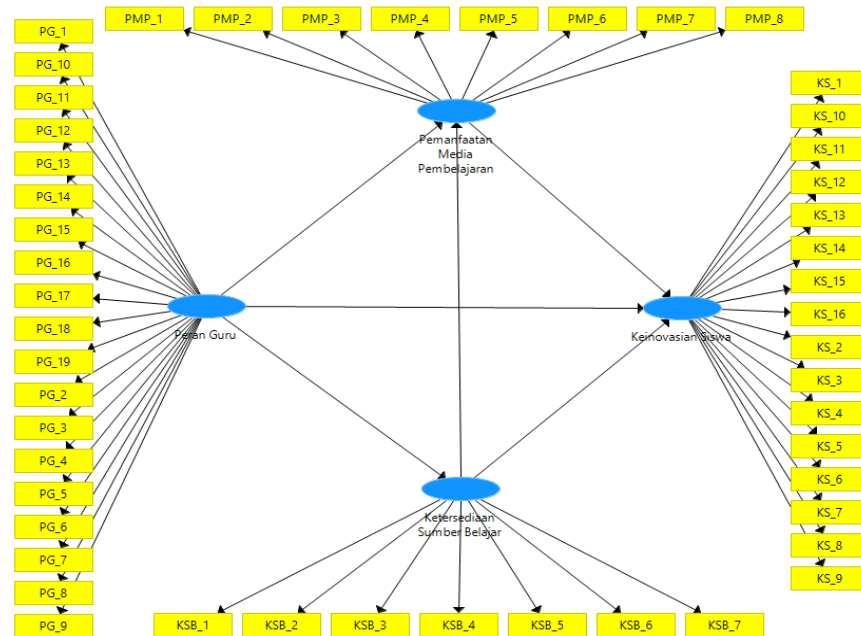


Figure 1 The Conceptual Framework

The hypothesis proposed in this study is:

1. There is a positive and significant influence between the teacher's role on the availability of learning resources in class XI Business and Management of SMKN Solok Regency.
2. There is a positive and significant influence between the teacher's role on the use of learning media in class XI Business and Management of SMKN Solok Regency.
3. There is a positive and significant influence between the availability of learning resources on the use of learning media in class XI Solok Business and Management SMKN Solok Regency.
4. There is a positive and significant influence between the teacher's role on the student's innovativeness in class XI Business and Management of SMKN Solok Regency.
5. There is a positive and significant influence between the availability of learning resources on the student's innovativeness in class XI Business and Management of SMKN Solok Regency.
6. There is a positive and significant influence between the use of learning media on the student's innovativeness in class XI Business and Management of SMKN Solok Regency.

Methods

Type of quantitative research uses a type of research correlational. The population was focused on all 328 students in class XI business and management in SMKN Solok Regency. By using a proportional

random sampling technique, 181 samples were obtained. The sample consisted of 11 study groups of class XI business and management expertise in the SMKN Solok. Questionnaires were submitted to respondents for answers based on a Likert scale (1) - (5). After the data is collected, test the validity and reliability of the instrument. This test uses the test outer model which consists of convergent validity test to describe the correlation between constructs and indicators, test discriminant validity to describe variables that should not be associated, instruments declared valid with cross loading indicator values greater than the correlation value with other latent variables and test reliability to describe the consistency of statements in the instrument and see the reliability of dimensions and indicators.

The data analysis technique used is Structural Equation Modeling (SEM). Structural Equation Modeling (SEM) is a statistical tool used to complete multilevel models simultaneously which cannot be solved by linear regression equations. SEM analysis in this study used Partial Least Square (PLS). Partial Least Square (PLS) is a variant-based structural equation (SEM) analysis that can simultaneously test measurement models and test models at the same time structural. models are Structural used to test causality (testing hypotheses with prediction models). The SEM procedure in Partial Least Square (PLS) programs will generally go through the following stages, namely the conceptualization of the model, determining the method of algorithm analysis, determining the method of resampling, drawing path diagrams and evaluating models (Ghozali, 2015: 47). At this stage of the model evaluation, SEM analysis requires two stages of assessment, namely, test outer model and test inner model. The outer model test is used to test construct validity and instrument reliability. The test inner model is used to show the relationship between one latent variable and another latent variable. The process of SEM analysis using software computer namely Smart PLS 3.

Results and Discussion

Based on the results of the study by distributing questionnaires to 181 respondents, the data obtained in the form of answers are tabulated and processed, then presented in the form of frequency distribution and percentage of respondents' answers. In the description of this variable, conclusions are made based on the Respondent's Achievement Rate (TCR). The Respondent's Achievement Rate (TCR) can range from 0% - 100%, then the respondent's answer criteria are divided into five categories. The following applies to each category; Not Good: 0% - 54.99%, Poor: 55% - 64.99%, Fair: 65% - 79.99% Good: 80% - 89.99%, Very Good: 90% -100% (Arikunto: 2002). The results are shown in Table 1.

Table 1 Distribution of Frequency of Respondent Answers

Number	Variable	Value Average	TCR (%)	Category
1.	Students Innovativeness	3.62	72.43	Good Enough
2.	Teachers Role	4.08	81.60	Good
3.	Availability of Learning Resource	3.27	65.38	Good Enough
4.	Use of Learning Media	3.19	63.85	Not Good

Source: Processed results of primary data, December 2018

Based on the results of the descriptive analysis, it shows that the TCR for students' innovativeness variables is a good enough category, meaning that the level of student innovation still needs to be improved. Furthermore, TCR for the teacher's role variable is a good category, meaning that the teacher has performed his role well in classroom learning. Then for TCR the availability of learning media variables is a good enough category, meaning learning can already be done using adequate learning resources. For TCR use of learning media variable is the not good category, meaning that the learning process has not use the learning media to the fullest.

SEM analysis based on Partial Least Square (PLS), requires 2 stages of assessment of a model. The first stage is the outer model test and inner model test (Ghozali, 2006). In the outer model test, construct validity and instrument reliability are carried out on each independent and bound variable. Based on the results of convergent validity, the manifest variable that is declared valid is the value loading factor of 0.7. Meanwhile, for the manifest variable that is declared invalid, it will be removed from the model. The initial results of validity testing are shown in the following Figure,

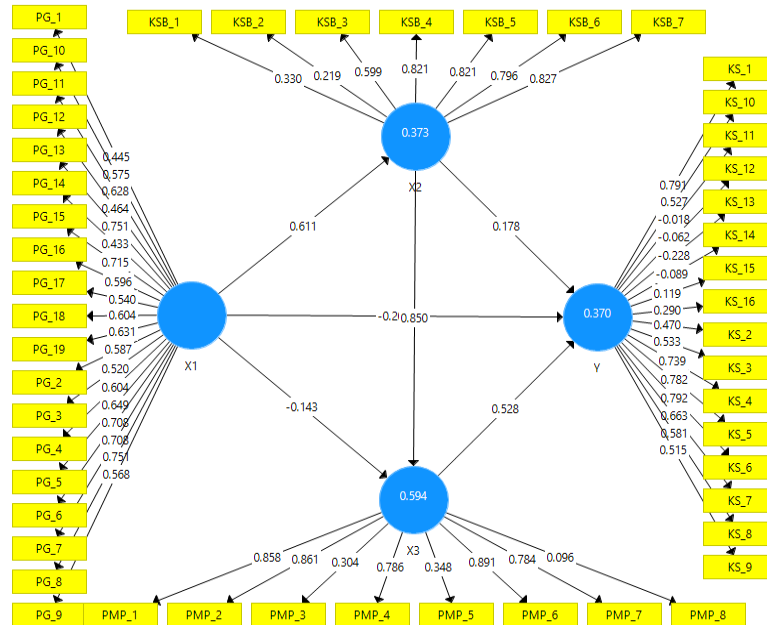


Figure 2 Early Model of SEM

Figure 2 explains that there are several indicators of each variable that do not meet valid criteria where the value of the loading factor is below 0.7. Therefore, invalid indicators must be removed from the model. If the invalid indicator is not removed from the model and remains included in the next test, it will result in a mistake in estimating the structural model. After modification and processing, the model formed can be seen in the picture below:

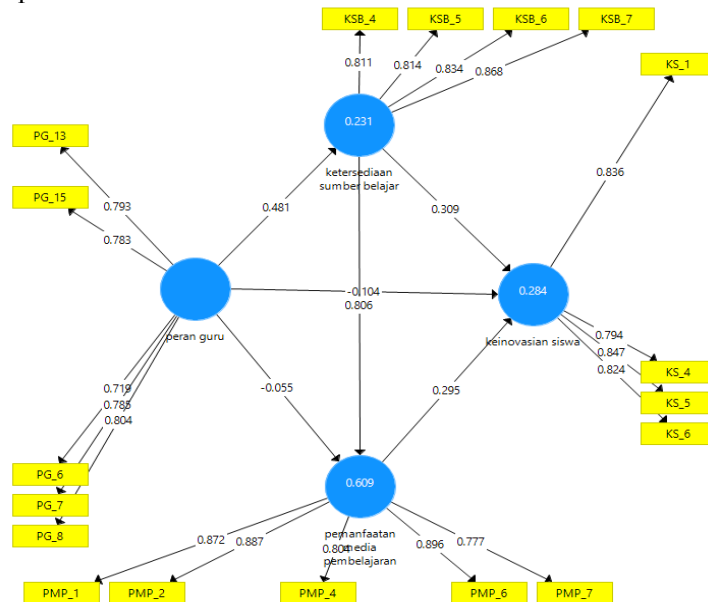


Figure 3 Path model of SEM

After testing the validity, the instrument reliability testing is carried out. In this reliability test, what is seen are the composite reliability value and Cronbach's alpha where the cut-off value is 0.7. For more details, please refer to the following table:

Table 2 Results of Test Reliability

Variable	Composite Reliability	Cronbach's Alpha
Students Innovativeness	0.895	0.855
Teachers Role	0.884	0.851
Availability of Learning Resources	0.900	0.864
Use of Learning Media	0.928	0.905

Source: Primary data is processed, December 2018

Based on table 2 composite reliability and Cronbach's alpha values for student innovativeness variables, teachers role, availability of learning resources and use of learning media above 0.7 which is a limitation of criteria, it can be concluded that the four variables are declared reliable, meaning indicators used as observed variables for latent constructs have able to explain the construct or latent variable it forms. The next test of the coefficient of determination (R^2). The coefficient of determination is useful for determining the proportion of the contribution of certain independent latent variables to the dependent variable substantively or not. The coefficient of determination (R^2) is between zero and one. If the value of R^2 approaches 1 then the influence given by the model is large or strong and vice versa. The coefficient of determination (R^2) of the model can be seen in the following table:

Table 3 Test Results The coefficient of determination(R^2)

Variable	R^2
Students Innovativeness(Y)	0.284
Use of Learning Media (X3)	0.609
Availability of Learning Resource (X2)	0.231

Source: Results of processed primary data, December 2018

In table 3, it can be seen that coefficient of determination for student's innovativeness variable is 0.284. This shows the influence of the weak category, meaning the magnitude of the influence of the teacher's role variables, the availability of learning resources and the use of learning media on students' innovativeness variables only 28.4%, while the remaining 71.6% is influenced by other variables. Furthermore, the coefficient of determination for the use of learning media variable is 0.609. This shows an influence with a fairly strong category, meaning that the magnitude of the influence of the teacher's role variables and the availability of learning resources on the use of learning media variable is only 60.9% while the remaining 39.1% is influenced by other variables not examined in this model. The coefficient of determination for the variable learning resources availability is 0.231. This shows a weak category of influence, meaning that the magnitude of the influence of teacher's role variables on the availability of learning resources variables is only 23.1% while the remaining 76.9% is influenced by other variables not examined in this model.

Next is *predictive relevance* (Q^2) to measure how well the observation value is generated by the model and also its parameter estimates. A model is considered to have predictive relevance value (Q^2) if $Q^2 > 0$. The results of the calculation of Q^2 in this study are 0.452 which means that the model has *predictive relevance* in a large category. The last test done is testing the hypothesis. Hypothesis testing aims to answer the problem in this study, namely the effect of exogenous latent constructs on endogenous latent constructs. The results of this research hypothesis testing can be seen in the following table:

Table 4 Results of Path Coefficients

Variable	Original Sample (O)	Standard Deviation (STDEV)	Standard Error (Sterr)	T Statistics
Teacher's role on availability of learning resources	0.481	0.492	0.051	9.3395
Teacher's role on use of learning media	-0.055	-0.052	0.047	1.166
Availability of learning resources on use of learning media	0.806	0.807	0.043	18.664
Teacher's role on student innovativeness	-0.104	-0.102	0.082	1.266
Availability of learning resources on student's innovativeness	0.309	0.324	0.156	1.983
use of learning media on student innovativeness	0.295	0.286	0.147	2.008

Source: Primary data processed, December 2018

Based on the hypothesis testing in table 4, it was found that there were two rejected hypotheses because they were not significant or did not match the specified testing criteria, namely hypothesis 2 and hypothesis 4. Both hypotheses had more t-statistical values small from t-table (1.97) at alpha 5% (0.05). Then the empirical model (findings model) formed as the final model of SEM is shown in the following figure:

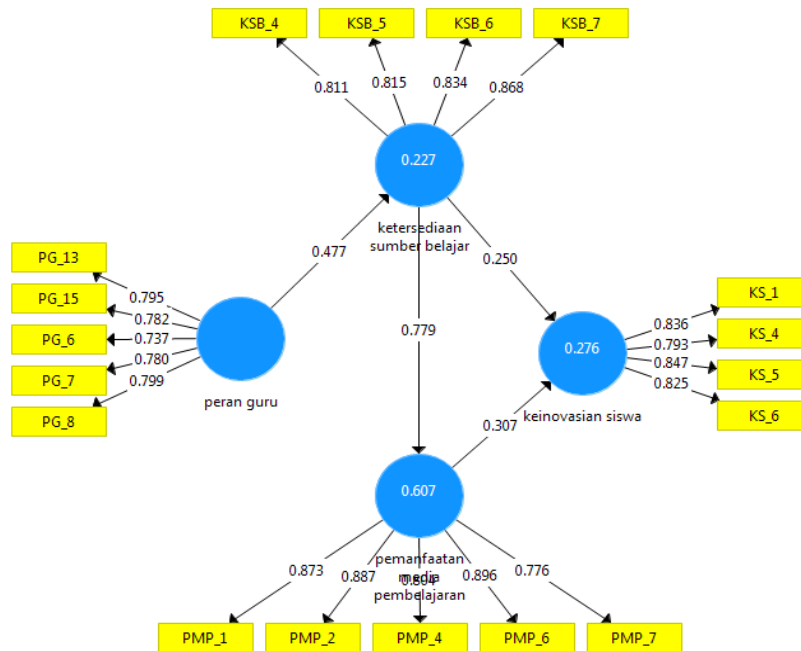


Figure 4 Empirical Model of SEM

Discussion

Results of structural equation modeling analysis that has been done obtained a coefficient of 0.481, which shows the magnitude of the influence given by teachers role variables on availability of learning resources in class XI business and management of SMKN Solok Regency. Where the standard value of the error is 0.05 is the level of estimation error that cannot be explained by this variable and the t-statistic value is 9,395> t-table 1.97 at alpha 5%. This means that Hypothesis1 is accepted, in other words, there is a positive and significant influence teacher's role on the availability of learning resources. The direction of

the relationship and its influence are positive, meaning that the better the teacher's role in the learning process, this will have an impact on the increasing availability of learning resources in the classroom. Conversely, the fewer or lower the teacher role will reduce the availability of learning resources for students. The results of this study are consistent with research conducted by Adeogun (2010). He found a very significant positive relationship between teacher roles and learning resources. The teacher's role is better in schools that are filled with learning resources than other schools. Effective teaching cannot occur in the classroom if there are no learning resources.

Teachers are required to have a variety of special abilities related to learning resources, such as using learning resources, introducing and presenting learning resources, explaining functions from various sources, selecting materials according to learning principles and theories, assessing the effectiveness of using learning resources and planning activities to use learning resources effectively (Duffy and Jonassen, 1992: 92). Availability of learning resources will greatly support the occurrence of the learning process optimally. In addition, the teacher must also take the initiative to empower the surrounding environment as a more concrete learning resource so as to increase knowledge and encourage teachers to be creative and professional, especially in providing learning resources. Based on these findings, the teacher's role can help students in the availability of learning resources in the classroom.

Furthermore, the results of structural modeling equation modeling obtained a coefficient of 0.806, which shows the magnitude of the influence given by the availability of learning resource variables on the use of learning media in class XI business and management of SMKN Solok Regency. Where the standard value of the error is 0.043 is the level of estimation error that cannot be explained by this variable and the t-statistic value is $18.664 > t\text{-table } 1.97$ at alpha 5%. This means that Hypothesis 3 is accepted, in other words, there is a positive and significant influence on the availability of learning resources on the use of learning media. The direction of the relationship and its influence are positive, meaning that the higher the availability of learning resources, the learning media can be used properly. Conversely, the lower the availability of learning resources, it will reduce the use of learning media itself.

Musfah (2012: 151) revealed that learning resources are means that can be used as tools to achieve learning goals and objectives. This means that learning resources are components that support the implementation of the learning process. Learning resources and learning media are components that support each other in learning activities. Based on these findings, the availability of learning resources for students becomes important in order to achieve learning objectives optimally, namely by using existing learning media. It is expected that teachers can play a role as mediators for the availability of learning resources and the use of learning media in schools.

Based on the results of structural modeling equation modeling also obtained a coefficient of 0.309, which shows the magnitude of the influence given the variable availability of learning resources on student's innovativeness in class XI business and management of SMKN Solok Regency. Where the standard value of the error is 0.156 is the level of estimation error that cannot be explained by this variable and the t-statistic value is $1.983 > t\text{-table } 1.97$ at alpha 5%. This means that Hypothesis 5 is accepted, in other words, there is a positive and significant influence on the availability of learning resources to students' innovativeness. The direction of the relationship and its influence are positive, meaning that the higher the availability of learning resources, the more innovative the students will be. Conversely, the fewer the availability of learning resources, the lower the students' innovativeness.

The results of this study are in accordance with Setiyani's research (2010), that the availability of learning resources is an important factor in supporting the success of the learning process. Learning resources provided can improve the basic abilities and creativity of students in learning activities. The availability of learning resources makes it easy for students to get information or references about learning materials, both in the form of reading material and directly from the speakers. Based on these findings, it can be said that with the availability of complete learning resources, students can obtain diverse and innovative material so that students' innovativeness continue to increase.

Based on the results of structural modeling equation modeling that has been done, it is obtained a coefficient of 0.295, which shows the magnitude of the influence given by the variable use of use of learning media on the student's innovativeness in class XI business and management of SMKN Solok Regency. Where the standard value of the error is 0.147 is the level of estimation error that cannot be explained by this variable and the t-statistic value is $2.008 > t\text{-table } 1.97$ at alpha 5%. This means that Hypothesis 6 is accepted, in other words, there is a positive and significant effect of the use of learning media on students' innovativeness. The direction of the relationship and its influence are positive, meaning that the higher the use of learning media, the more innovative the students will be. Conversely, the less use of learning media, the lower the students' innovativeness.

The results of this study are in accordance with Lazarus (2016) research which revealed that the use of higher learning media is only available in high-performance schools. High-performance schools produce students who are creative and innovative. This shows that the use of learning media can increase student innovativeness. Based on these findings, it can be said that the use of learning media can create an attractive learning environment and clarify learning material to be concrete and easily understood by students, so as to increase student innovativeness.

Conclusion

Innovativeness is one of the important abilities students must have to increasingly fierce competition. Students who have innovativeness will find it easier to reach employment opportunities than students who do not have innovativeness in this digital era. In addition, innovativeness will encourage students to participate in sustainable innovation and can develop the economy in the business and industrial world.

Structural Equation Modeling (SEM) analysis clarifies the indirect influence and direct influence on students' innovativeness. First, the teacher's role has an indirect influence on students' innovativeness through the availability of learning resources. This shows that the teacher's role shapes the availability of learning resources that are useful for increasing student innovativeness. This formation process is created through special abilities possessed by teachers related to learning resources, such as introducing and presenting learning resources, explaining functions from various learning sources, selecting materials according to learning principles and theories, assessing the effectiveness of using learning resources and planning activities to use learning resources effectively thus increasing student innovativeness. Second, the availability of learning resources and use of learning media directly influence on student innovativeness.

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