The Influence of Education Level, Teaching Experience, and Training on Teacher Pedagogical Competence in the Technical Implementation Unit of State Vocational High Schools

Syamsumarlin, Hendra Gunawan dan Mislia
Sekolah Tinggi Ilmu Ekonomi AMKOP Makassar, Indonesia
Syamsumarlin@gmail.com, hendramanajemen@gmail.com, mislia.mislia@yahoo.com

Nurlaelah Mahmud
Universitas Muhammadiyah Sidenreng Rappang, Indonesia
nurlaelah.pps13@gmail.com

Misnawati
Sekolah Tinggi Ilmu Hukum Pengayoman, Makassar, Indonesia
misnawati_amir@yahoo.com

Effendi M
Universitas Terbuka
effendim@ecampus.ut.ac.id

Irianty Bandu
Cultural Sciences Faculty, Hasanuddin University, Indonesia
aintybandu62@gmail.com

Abstract
This research was conducted at the Technical Implementation Unit of State Vocational High Schools in the Regional Office III Branch of West Sulawesi Province from September to October 2019. This type of research is a survey using a questionnaire for data collection. The study population used all ASN teachers in the Technical Implementation Unit of State Vocational High Schools in the Regional Office III Branch of West Sulawesi Province, totaling 103 people. The sample consisted of 103 teachers as respondents who were determined based on non-probability sampling with saturated sampling techniques. Data analyzed using multiple linear regression analysis, partial test (T-test), simultaneous test (F-test), and test the coefficient of determination (R²). The results showed that: (1) the level of education had a positive and significant effect on teachers' competence, and (2) teaching experience had a positive and significant impact on the pedagogical of teachers' competence in the Implementing Unit. Technical Vocational High Schools in the Regional Office III Branch of West Sulawesi Province, (3) training has a positive and significant effect on the pedagogical competence of teachers in the Technical Implementation Unit of Public Vocational High Schools in the Regional Office III Branch of West Sulawesi Province, and (4) the level of education, Teaching experience, and training have a positive and significant effect on teacher pedagogical competence at the Technical Implementation Unit of State Vocational High Schools in the Regional Office III Branch of West Sulawesi Province

Keywords:
Education Level, Teaching Experience, Training, Pedagogical Competence
1. Introduction

The vocational education program has a vital role in producing a skilled workforce expected to contribute to regional development. West Sulawesi Province is one of the youngest provinces in need of accelerated growth to catch up with the already established areas. Since forming its autonomous government on October 5, 2004, West Sulawesi has not made many educational achievements at the national level. Even the regions resulting from the division of South Sulawesi Province have not been able to stand on a par with other provinces, especially in education at the secondary vocational level. Based on data released by the Ministry of Education and Culture (2019), the 2018/2019 school year Computer-Based National Examination (UNBK) for SMK, West Sulawesi are at the bottom of the list of other provinces in Indonesia. As a young province, West Sulawesi needs reliable human resources as the central pillar of regional development. Human resource development through SMK is one of the best ways to prepare regional sons and daughters as the next generation of growth in the area. Therefore, the backward quality of vocational high school education in West Sulawesi should be the government's primary concern to be fixed.

Transportation access to most areas of Mamasa Regency is quite challenging to reach. Mountain topography with steep ravines is a challenge in itself in the implementation of education in the region. Apart from transportation, access to information through internet technology and telephone networks and the availability of electricity are also problems often found in SMK in Mamasa Regency. The internet network can only be accessed in the district capital, Mamasa sub-district and its surroundings, and parts of Sumarorang sub-district. Meanwhile, people in Mambi, Arielle, Tandu Kalua, Balla, and Messawah sub-districts can enjoy cellular telephone network facilities. Even schools in the Pana, Nosu, Sesena Padang sub-districts, and other remote and underdeveloped areas do not yet have electricity. SMK is a school that is expected to produce a skilled workforce; with conditions like this, if it is not handled with good management, it will be challenging to produce the expected output.

There are 40 State Vocational High Schools in the Regional Office III Branch of West Sulawesi Province, consisting of 14 State SMK and 26 Private SMK. SMK's existence as a school run by the government is essential as a pilot school for SMK run by the community (SMK Swasta). Private vocational high schools (SMK), which is more significant in number than State Vocational High Schools, have specific causes and reasons. State Vocational High Schools' inability to accommodate the surrounding community's educational needs and the low quality of schools is one of the causes of private vocational schools' spread. For this reason, as a government school, State Vocational High Schools in the Regional Service Branch III must be able to demonstrate their existence as schools with better quality to the community by making improvements in the school management system.

Several State Vocational High Schools scattered in each sub-district have minimal students, while several private SMK is established in the same area. SMK 1Buntu Malangka, for example, in the 2019/2020 school year, only had 27 students. Simultaneously, two other private SMK are standing within a radius of fewer than 5 kilometers from the State Vocational High Schools. The large number of private SMK impacts students' reduction, including vocational high schools, who enter State Vocational High Schools. State Vocational High Schools must compete for prospective students with Private Vocational Schools every season for new students' admission. This condition requires State Vocational High Schools to maintain their existence and compete to become the community's favorite educational destination. Improving the school's quality and quality of education is the best choice to become a superior school and become the community's choice.

Students' academic achievement is an indicator that can be assessed to see the success of educational programs. At the end of each academic year, the government imposes a national exam on all schools. The results of the national exams are what illustrates the success of students during their education. The level of success of education in the Technical Implementation Unit of State Vocational High Schools in the Regional Office III Branch of West Sulawesi Province is shallow. For example, in the 2018/2019 academic year results, SMK 1 Bambang had external scores on average. 37.15 (Ministry of Education and Culture, 2019).

Another problem that occurs is that, in general, the Technical Implementation Unit of State Vocational High Schools in the Regional Office III Branch of West Sulawesi Province has not produced many workers who are superior in their fields. State Vocational School alumni's actual achievements and works in the region in the world of work have not been seen significantly. According to their expertise. More of those who should have expertise continue their education to higher education than those who started their career in the world of work. The choice not to work after completing SMK is not impossible to be influenced by students' lack of knowledge, which results in them unable to compete with other workers.

Students' academic achievement is an indicator that can be assessed to see the success of educational programs. At the end of each academic year, the government imposes a national exam on all schools. The results of the national exams are what illustrates the success of students during their education. The level of success of education in the Technical Implementation Unit of State Vocational High Schools in the Regional Office III Branch of West Sulawesi Province is shallow. For example, in the 2018/2019 academic year results, SMK 1 Bambang had external scores on average. 37.15 (Ministry of Education and Culture, 2019).

Another problem that occurs is that, in general, the Technical Implementation Unit of State Vocational High Schools in the Regional Office III Branch of West Sulawesi Province has not produced many workers who are superior in their fields. State Vocational School alumni's actual achievements and works in the region in the world of work have not been seen significantly. According to their expertise. More of those who should have expertise continue their education to higher education than those who started their career in the world of work. The choice not to work after completing SMK is not impossible to be influenced by students' lack of knowledge, which results in them unable to compete with other workers.
The Technical Implementation Unit for State Vocational High Schools in the Regional Office III Branch of West Sulawesi Province is required to improve its quality of education. This is necessary to meet the educational needs of the community and to face global competition. To produce the best graduates, schools must provide the best possible knowledge for students. This provision is knowledge and work skills and must have a good attitude (Akhlaqul Karimah). Knowledge and skills must be carried out together with a good mood and mentality to get maximum positive results. Provision of broad-based knowledge and skills, and expertise can destroy the social order if implemented without being based on noble mental and moral values. The components of knowledge, skills, and noble character must be fulfilled in realizing vocational education's goals.

2. Literature Review
2.1. Definition of education level
In the Indonesian education system, there are education levels tailored to national education development needs, in the Law of the Republic of Indonesia Number 20 of 2003 concerning the National Education System. It is stated that the level of education is the stage of education that is determined based on the level of development. Of students the goals to be achieved. And the abilities developed. The story of education can also be referred to as the level of education. At each level of education, a different curriculum is organized according to each group's expected output.

2.2. Definition of teaching experience
Experience is everything that humans have gone through and felt in the past. Experiences can continue until now and can also end in the past. Experience can be capital in shaping a person's maturity in facing all the problems in his life. Soelaiman (1975) states that experience is a process passed in making a relationship with the experience's environment. According to Purwodarminto (1996), experience is a state, situation, and condition that has been experienced (felt), carried out, and accounted for in actual practice in life.

2.3. Definition of training
Training comes from the root word "train," which means to get used to. Training yourself to do something can have a random effect on your body movements. Training is a planned program that is carried out by direct practice or also by performing job simulations. Training activities are carried out to make someone more sensitive and master their work. Training will form body movements spontaneously and relax in carrying out all activities related to training materials. Daryanto and Bintoro (2014) suggest that exercise, or what is commonly called education and training, is a systematic process to develop knowledge, skills. And attitudes needed to carry out tasks a person and are expected to influence both the person concerned and the organization where he works.

2.4. Definition of academic competence
In every job, of course, it takes responsibility in its implementation to achieve the goals that have been set. The achievement of national education objectives is the shared responsibility of all education stakeholders in this country, especially teachers (Mu'adi et al., 2020; Nawawi et al., 2020). As implementing technical education in schools, teachers must implement teaching and education based on national education standards. To carry out education according to national standards, teachers must have exemplary professionalism. Teachers' position as professionals serves to increase teachers' dignity and role as agents of learning to improve the quality of national education. As a profession, teachers must have particular competencies as qualifications in carrying out their duties.

3. Methods
This study uses a quantitative approach (quantitative research). Quantitative research uses research data in numbers and analysis using statistics (Sugiyono, 2013; Nuraini et al., 2019; Umanailo, 2020, 2019). The quantitative research approach is the method used to test specific theories by examining the relationship between variables. This research was carried out at the Technical Implementation Unit of Public Vocational Schools in the Regional Office III Branch of West Sulawesi Province, which started in September and ended in October 2019.

4. Results
The analysis of multiple linear regressions in this study was used to determine the influence of Education Level, Teaching Experience, and Training on Teacher Pedagogic Competency in the Technical Implementation Unit of State Vocational High School in Regional Office III Branch of West Sulawesi Province. The purpose of this analysis is to answer research questions and prove pre-defined hypotheses. This analysis was conducted by processing the
respondents’ answers to questionnaires provided through the assistance of the SPSS 19.0 program. The results of the data processing can be seen in the summary of empirical results as follows:

<table>
<thead>
<tr>
<th>Model</th>
<th>Unstandardized Coefficients</th>
<th>Standardized Coefficients</th>
<th>t</th>
<th>Sig</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>B</td>
<td>Std. Error</td>
<td>Beta</td>
<td></td>
</tr>
<tr>
<td>1 (Constant)</td>
<td>9.185</td>
<td>2.097</td>
<td>4.380</td>
<td>0.000</td>
</tr>
<tr>
<td>level of education (X1)</td>
<td>0.442</td>
<td>0.124</td>
<td>0.27</td>
<td>3.008</td>
</tr>
<tr>
<td>teaching experience (X2)</td>
<td>0.327</td>
<td>0.145</td>
<td>0.221</td>
<td>2.569</td>
</tr>
<tr>
<td>training (X3)</td>
<td>0.766</td>
<td>0.138</td>
<td>0.481</td>
<td>5.555</td>
</tr>
</tbody>
</table>

Source: Data processing, 2019.

From table 1 above can be made the regression equation of the output as follows: And $9.185 + 0.442X1 + 0.327X2 + 0.766X3$. The explanation of table 4.11 above is as follows:

The constant of 9.185 means that if the Level of Education (X1), Teaching Experience(X2), and Training (X3) constants, then Pedagogic Competence (Y) increases by 9.185.

The Value of Education Level (X1) of 0.442 means that if the Education Level (X1) increases by 1 point, then Pedagogic Competence will increase by 0.442.

The Value of Teaching Experience (X2) of 0.327 means that if the Teaching Experience (X2) increases by 1 point, then Pedagogic Competency (Y) will increase by 0.327.

Training Value (X3) of 0.766 means that if the Teaching Experience (X3) increases by 1 point, then Pedagogic Competency (Y) will increase by 0.766.

Table 1 above, which has the most vital significance of influence, is the Training variable (X3). This can be seen from the significance value for the minor Training variable of 0.000 (having the most number difference below 0.05), when compared to the value of the significance of the Education Level variable (X1) and the Teaching Experience variable (X2), whose values are consecutively 0.010 and 0.020 (closer to 0.05).

Partial test results based on table 1 above are outlined by showing the proof of hypothetical correctness (the influence of a positive and significant Level of Education on Pedagogic Competencies. The power of positive and considerable Teaching Experience on Pedagogic Competencies. and the presence of positive and significant training influence on Pedagogic Competencies) as follows:

First hypothesis; The calculated value for the Education Level variable (X1) against pedagogic competency (Y) was obtained at 3.008, while the tablet value used was 1.984. This indicates that (count > table). The significance value is 0.010, which suggests that the significance value is less than 0.05. At the same time, the value of Standardized Coefficients beta is 0.270. These partial test results show that the variable Level of Education has a positive and significant effect on the Pedagogic Competence of teachers in the Technical Implementation Unit of State Vocational High Schools in The Regional Office Branch III of West Sulawesi Province. In other words that hypothesis 1 is accepted.

Second hypothesis; The calculated value for the Teaching Experience variable (X2) against pedagogic competency (Y) was obtained at 2.569, while the tablet value used was 1.984. This indicates that (count > table). The significance value is 0.020, which suggests that the significance value is less than 0.05. At the same time, the value of Standardized Coefficients beta is 0.221. This partial test showed that the teaching experience variable had a positive and significant effect on the Pedagogic Competency of teachers in the Technical Implementation Unit of State Vocational High Schools in The Regional Office Branch III of West Sulawesi Province. In other words that hypothesis 2 is accepted.

Third hypothesis

The calculated t value for the Training variable (X3) against the Pedagogic Competency (Y) was obtained at 5.555, while the tablet value used was 1.984. This indicates that (count > table). The significance value is 0.000, which
suggests that the significance value is less than 0.05. At the same time, the weight of Standardized Coefficients beta is 0.481. This partial test showed that the training variable had a positive and significant effect on the Pedagogic Competency of teachers in the Technical Implementation Unit of State Vocational High Schools in The Regional Office Branch III of West Sulawesi Province. In other words that hypothesis 3 is accepted.

Simultaneous test results to show the proof of hypothetical correctness (the influence of education level, Teaching Experience, and Training that is positive and significant simultaneously on Pedagogic Competence) can be seen in table 2 below:

<table>
<thead>
<tr>
<th>Table 2. Simultaneous Test Results with F Test</th>
</tr>
</thead>
<tbody>
<tr>
<td>ANOVA</td>
</tr>
<tr>
<td>Model</td>
</tr>
<tr>
<td>------------------</td>
</tr>
<tr>
<td>1 Regression</td>
</tr>
<tr>
<td>Residual</td>
</tr>
<tr>
<td>Total</td>
</tr>
</tbody>
</table>

**Source:** Data processing, 2019.

From table 2 above, it is known that the calculated F value is 51,518. At the free degree 1 (df1) = the number of variables - 1 (4-1) is 3, and the free degree 2 (df2) = the number of respondents - the number of variables (n-k) =103-4 is 99, the value of table at the level of significance trust 0.05 is 2.52. Based on the acquisition of Fount and F-table, it is known that Calculates> F-table (51,518 > 2.52) and for its significance level is 0.000 which is less than 0.05 (0.000 < 0.05). Therefore, it can be concluded that the Level of Education (X1), Teaching Experience (X2). And Training (X3) together (simultaneously) have a positive and significant effect on the Pedagogic Competence of teachers in the Technical Implementation Unit of State Vocational High Schools in The Regional Office Branch III West Sulawesi Province. In other words that hypothesis 4 is accepted.

The results of the determination coefficient test to measure the ability of how large the percentage of independent variable variations in the regression model linear multiple to set as a variety of dependent variables in this study can be seen in Table 3 below:

<table>
<thead>
<tr>
<th>Table 3. Coefficient of Determination Test</th>
</tr>
</thead>
<tbody>
<tr>
<td>Model Summary</td>
</tr>
<tr>
<td>Model</td>
</tr>
<tr>
<td>-------</td>
</tr>
<tr>
<td>1</td>
</tr>
</tbody>
</table>

**Source:** Data processing, 2019.

From table 3 obtained the value of R square of 0.610, which means that the ability of independent variables (Level of Education, Teaching Experience, and Training) to explain variations independent variables (Pedagogic Competencies) is 0.610 or 61%. In comparison, the remaining 39% is another variable that is not included in the equation studied. This indicates that the variables of Education Level, Teaching Experience, and Training have a dominant influence on teachers' academic competency variables in the Technical Implementation Unit of State Vocational High Schools in The Regional Office Branch III of West Sulawesi Province.

5. Discussion

The hypothesis testing results indicate that the level of education positively affects teachers' academic competence in the Technical Implementation Unit of Public Vocational High Schools in the Regional Office III Branch of West Sulawesi Province. The partial test results evidence this. With the acquisition of the count for the education level variable of 3.008, which is greater than the table value of 1.984. The education level also has a significant effect on teachers' academic competence in the Technical Implementation Unit of State Vocational High Schools in Regional Service Branches. III West Sulawesi Province. This is also evidenced in the partial test results that the acquisition of a significant value for the education level variable is 0.010, less than 0.05.

The hypothesis testing results show that teaching experience positively affects teacher pedagogical competence at the Technical Implementation Unit of State Vocational High Schools in the Regional Office III Branch of West Sulawesi Province. This is evidenced by the partial test results with the acquisition of count for the teaching experience variable...
is 2.569, more significant than the table value of 1.984. Teaching experience also significantly affects teachers' academic competence in the Technical Implementation Unit of State Vocational High Schools in the Regional Office III Branch. West Sulawesi Province. This is also evidenced that test results of a significant value for the teaching experience variable is 0.020, less than 0.05.

The hypothesis testing results indicate that training positively affects teachers' pedagogical competence in the Technical Implementation Unit of Public Vocational High Schools in the Regional Office III Branch of West Sulawesi Province. This is evidenced by the test results of the training variable is 5.555, which is greater than the t table value of 1.984. Training also has a significant effect on teacher pedagogical competence in the Technical Implementation Unit of State Vocational High Schools in the Regional Office III Branch of Sulawesi Province. West. This is also evidenced that test results of a significant value for the training variable is 0.000, which is less than 0.05.

Teaching Experience and Training on Pedagogical Competence The results of hypothesis testing show that the level of education, teaching experience, and training positively affects the pedagogical competence of teachers at the Technical Implementation Unit of State Vocational High Schools in the Regional Office III Branch of West Sulawesi Province. This is evidenced by the simultaneous test results with the F value acquisition for the variable level of education, teaching experience, and training of 51.518, which is greater than the table value of 2.52. The story of education, teaching experience, and exercise also significantly affects the pedagogical competence at the Technical Implementation Unit of State Vocational High Schools in the Regional Office III Branch of West Sulawesi Province. This is also evidenced that test results of a significant value for the training variable is 0.000, which is less than 0.05.

6. Conclusion
The education level has a positive and significant effect on teachers' educational competence in the Technical Implementation Unit of State Vocational High Schools in the Regional Office III Branch of West Sulawesi Province. This shows that the higher the level of education, the more the teacher's pedagogical competence will be, and vice versa; if the level of education is low, its academic competence will be lower; Teaching experience has a positive and significant effect on teachers' educational competence at the Technical Implementation Unit of State Vocational High Schools in the Regional Office III Branch of West Sulawesi Province. This shows that the higher the teaching experience, the more the teacher's pedagogical competence will be increased. And vice versa; if the teaching experience is low, the teacher's educational competence will be lower; Training has a positive and significant effect on teacher pedagogical competence at the Technical Implementation Unit of State Vocational High Schools in the Regional Office III Branch of West Sulawesi Province. This shows that the more the training implementation will increase teachers' pedagogical competence, and vice versa; if the training implementation is not practical, the increase in teacher academic competence will be lower; The level of education, teaching experience, and training positively and significantly affect teachers' pedagogical competence in the Technical Implementation Unit of Public Vocational High Schools in the Regional Office III Branch of West Sulawesi Province. This shows that a high level of education, good teaching experience, and the effectiveness of the implementation of training will make the teacher's pedagogical competence better, and vice versa if the level of education is low. Teaching experience is lacking—the ineffectiveness of the implementation. Training will adversely affect teachers' academic competence, especially in the Technical Implementation Unit of State Vocational High Schools in the Regional Office III Branch of West Sulawesi Province.

References

© IEOM Society International 3281


Peraturan Menteri Pendidikan Nasional Republik Indonesia Nomor 16 Tahun Standar Kualifikasi Akademik dan Kompetensi Guru. Jakarta:

Peraturan Pemerintah Republik Indonesia Nomor 19 Tahun 2005 Tentang Standar Nasional Pendidikan. Jakarta:


© IEOM Society International 3282
Undang-Undang Republik Indonesia Nomor 14 Tahun 2005 Tentang Guru dan Dosen. Jakarta:
Undang-Undang Republik Indonesia Nomor 20 Tahun 2003 Tentang Sistem Pendidikan Nasional. Jakarta:

Biographies
Syamsumarlin is a student at Magister Program of Economic Science of STIE AMKOP, Indonesia. His areas of interest and research include social science and economic. He has published some articles in national journals.

Hendra Gunawan is a lecturer at Economics Department of STIE AMKOP, Indonesia. His areas of interest and research include economic, management, management human resource. He has published some books and many articles in national and international journals.

Mislia is a lecturer at Economics Department of STIE AMKOP, Indonesia. Her areas of interest and research include economic, management, management human resource. She has published some books and many articles in national and international journals.

Nurlaelah Mahmud is a lecturer in the Indonesian Language Education Study Program at the Muhammadiyah University of Sidenreng Rappang, Indonesia. Her areas of interest and research include Literary Theory, Rhetorical Speaking, Writing, Reading, Buginese Language, and Literature. She has written and published several literary works in poetry and short stories since 2014 and has published several nationally and internationally articles.

Misnawati is a lecturer in the Department of Law at the Sekolah Tinggi Ilmu Hukum Pengayoman, Indonesia. She earned a master's degree through scholarship assistance from the Ministry of Youth and Sports of the Republic of Indonesia. In addition to being a lecturer, she is also a social worker who assists the poor in empowering themselves to get out of the poverty line. She has published a book about his profession as a social worker. Besides that, she has also published many international and national journals through collaboration with several other lecturers who focus on multidisciplinary science.

Effendi M is a lecturer at the Faculty of Teacher Training and Education, Universitas Terbuka, Indonesia. His areas of interest and research include Education, Psychology, and Social Sciences. He graduated from S1 of Macassar State University in Art and Language Education and graduated from the Department of English Language Studies, Hasanuddin University Macassar. He has published several articles in national and international journals. He became the Association of Indonesian Teachers.

Irianty Bandu is a lecturer in Cultural Sciences Faculty, Hasanuddin University, Indonesia. She teaches courses in linguistic, French language and methodology. the field of research carried out is education and linguistic.