The effects of pedagogic and professional competence smk teacher’s to teacher’s performance

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Abstract. This research conducted: (1) to know if there is effect of pedagogic and professional competence teacher’s to teacher’s performance in learning process; and (2) to know how much effects of pedagogic and professional competence teacher’s to teacher’s performance. This research is using quantitative descriptive method. Data was collected using questionnaire and analyzed using multiple regression technique. The results showed that: (1) pedagogic and professional competence teacher’s have significant effect to teacher’s performance in learning process; (2) more than 50% teachers have high performance, pedagogic competence and professional competence.

Keywords: performance, pedagogic competence and professional competence

1. Introduction
Entering industry revolution era 4.0, Indonesia’s education, especially vocational education is facing more complicated and complex challenge. Vocational education institution have to compete to produce qualified human resources suitable for work requirement, because education is the key to enhance the quality of human resources [20]. Main goal of education is to form student’s personality, guide fundamental values, maturity and personal integrity in order to teach responsibility to the students. One of important component in education is teacher, because teacher assumed to be able to understand, perform and achive education’s goal [17]. In learning process, teacher is a dominant factor and central character in deciding student’s achievement [6] [11].

Learning process is an unique and specific activity, a teacher have to master many perspective and strategy and be able to apply flexibly. A teacher who has good competence, skill, professionalism, responsibility, commitment and performance is needed since teacher’s involvement in learning process is so important. Competent, skilled and responsible professional teacher can enhance education quality and produce qualified human resources [4].

Teacher’s performance is how a teacher act in learning process based on ability, skill, responsibility and authority of performance standard. Teacher’s performance was influenced by some factors such as competence, commitment, innovation and motivation. The result of research found that [15], there is positive effect between competence and motivation with teacher’s performance. Other research [21] found that there is relationship between competence, work commitment and motivation with teacher’s performance. In this research [2], there is significant relationship between pedagogic and professional competence with commitment.

As a professional staff, teacher has very important role in order to deliver effective and qualified learning process. Teacher is a key person, so they are expected to enhance education quality that can seen in student’s study result [12]. Student’s achievement in learning process is determined by their
Teacher must have 4 (four) basic competencies which are (1) pedagogic competence; (2) professional competence; (3) personality competence; and (4) social competence. Not only teacher have to have 4 basic competencies, but having a good performance also important in order to deliver a good learning process for students. There are some definition about performance stated by experts such as [3], [5], [8], [13], [19]. It can be concluded based on those definition that performance is someone or group behaviour in doing their task according to their ability, skill, responsibility and authority based on performance standard that was set before in a certain period of time in order to achieve organization goal corresponding to law, morale and ethic.

Teacher’s performance is an ability to do their job as educational agent and achieve national education goal that can be measured based on professional teacher competence criteria. Teacher’s performance consist of:
1. Arranging Learning Implementation Planning (RPP) that explain about: (a) identity; (b) focus of learning; (c) learning content; (d) learning strategy; (e) learning tools; and (f) evaluation.
2. Conduct learning process, consist of: (a) start a learning process; (b) learning main activity; dan (c) end a learning process.

A diagram can be made to explain more about relationship between pedagogic and professional competence with performance based on previous theories.

![Diagram](image.png)

Figure 1. Relationship between Pedagogic and Professional Competence with Teacher’s Performance in Learning Process

One factor that affect education quality is teachers’ performance in learning process. Pedagogic competence and professionalism are two key elements to measure teachers’ performance in learning process. Good understanding about pedagogic competence and profesionalism indirectly can improve education quality.

### 2. Method

This research using quantitative descriptive method to explain examined object or subject systematically based on object’s facts and characteristics. Research was held in SMKN 1 Padang, SMKN 5 Padang, and SMKN 1 Sumbar. Subject of this research is teachers that teach subjects in class, laboratory or workshop and students. Steps of implementation are: (1) preliminary research and information collection; (2) model arrangement between variables; (3) validity test through expert judgement and revision; (4) making research instrument; (5) reasearch instrument test; (6) research data collection; (7) reasearch data analysis; and (8) report writing.

Instrument guideline was developed based on research variables.
Table 1. Research Instrument Guideline

| Variabel                          | Indicator                                                                 |
|-----------------------------------|--------------------------------------------------------------------------|
| 1. Teacher’s Performance (Y)      | a. Arrange Learning Implementation Planning                                |
|                                   | b. Doing Learning Process                                                 |
| 2. Pedagogic Competence (X₁)      | a. Learning Process Planning                                              |
|                                   | b. Learning Process Implementation                                       |
|                                   | c. Learning Process Evaluation                                            |
| 3. Professional Competence (X₂)   | a. Content Understanding                                                  |
|                                   | b. Learning Strategy Understanding                                        |
|                                   | c. Relationship Between Content and Context                               |

In this research, data analysis consist of two parts, which are analysis about research instrument and analysis about effect between variables as determined model. Instrument analysis consist of validity and reliability. Analysis of effect between variables using multiple regression technique.

Item characteristics test held before reliability and validity estimation measure to know the items quality of an instrument. Qualified items then used in reliability and validity analysis. Item measurement was used to show the suitability between item function with comprehensive test function. Suitability test between item function and test measurement function was calculated using corrected total-item correlation coefficient. Corrected total-item coefficient formula [16] as below.

\[
    r_{i(x-i)} = \frac{(r_{ix}S_x - S_1)}{\sqrt{(S_x^2 + S_1^2 - 2r_{ix}S_1S_x)}} \\
    r_{i(x-i)} = \text{Corrected total item correlation coefficient} \\
    r_{ix} = \text{Uncorrected total item score correlation coefficient} \\
    S_i = \text{Item score standard deviation} \\
    S_x = \text{Test score standard deviation}
\]

Instrument reliability was calculated using Kuder-Richardson-20 formula:

\[
    KR - 20 = \left[ k(k - 1) \right] [1 - \Sigma p(1 - p)/S_x^2] \\
    KR - 20 = \text{instrument reliability coefficient} \\
    S_x^2 = \text{test score variance} \\
    p = \text{subject proportion that get score 1 in an item} \\
    k = \text{amount of items in test}
\]

Multiple analysis regression was used to examine relationship between two or more variables, or to know how independent variables variance affected dependent variables. Multiple regression equation used as below:

\[
    Y = a + b_1X_1 + b_2X_2 \\
    b_1 = \frac{\Sigma x_2^2 \Sigma x_1 y - \Sigma x_1 x_2 \Sigma x_2 y}{(\Sigma x_1^2)(\Sigma x_2^2) - (\Sigma x_1 x_2)^2} \\
    b_2 = \frac{\Sigma x_1^2 \Sigma x_1 y - \Sigma x_1 x_2 \Sigma x_2 y}{(\Sigma x_1^2)(\Sigma x_2^2) - (\Sigma x_1 x_2)^2}
\]
\[ a = \frac{\sum y}{n} - b_1 \left( \frac{\sum x_1}{n} \right) - b_2 \left( \frac{\sum x_2}{n} \right) \]  

(6)

Descriptive statistic used to categorize measurement result based on used scale. This research using four scale, they are [9]:

- Very high category: \( X \geq \bar{X} + 1.75 \)  
- High category: \( \bar{X} + 1.75 > X \geq \bar{X} \)  
- Low category: \( \bar{X} > X \geq \bar{X} - 1.75 \)  
- Very low category: \( X < \bar{X} - 1.75 \)

Explanation:
- \( \bar{X} \) = score average
- \( SB_X \) = score standard deviation
- \( X \) = score

3. Research Result

Instrument analysis results of teacher’s competence, pedagogic competence and professional competence teacher’s showed that almost all instrument items have corrected total-item correlation coefficient \( \geq 0.3 \) and only a few have corrected total item correlation coefficient value \(< 0.3 \). Items with corrected total item correlation coefficient values \(< 0.3 \) have the sentences restructured in order to be able to used in research.

Teacher’s performance instrument have 0.881 reliability value, pedagogic competence instrument have 0.884 reliability value, and teacher’s professional competence instrument have 0.926 reliability value. So it can be concluded that all instrument have high trust level and can be used in this research.

Regression analysis used SPSS as a tool. The regression equation result from analysis is:

\[ Y = 6.442 + 0.333 X_1 + 0.274 X_2 \]  

(11)

Category of teacher’s performance variable, pedagogic competence and teacher’s professional competence shown in table below:

| Table 2. Category of Teacher’s Performance | Percentage |
|------------------------------------------|------------|
| Very High                                | 3.23       |
| High                                     | 59.26      |
| Low                                      | 35.04      |
| Very Low                                 | 2.47       |
| Total                                    | 100.00     |

Test result showed that 62.49% teacher’s have performance with high category in learning process. It’s indicate that teacher’s have made good RPP and conducting good learning process.

| Table 3. Category of Pedagogic Competence | Percentage |
|------------------------------------------|------------|
| Very High                                | 2.80       |
| High                                     | 57.14      |
| Low                                      | 32.06      |
| Very Low                                 | 8.00       |
The amount of certificated teacher’s have 59.94% pedagogic competence in high category. Pedagogic competence is one of basic competence that have function to plan, implement, and evaluate learning process. Low pedagogic competence can cause an unwanted result from planning, implementing and evaluating learning process. It will affect students development and education quality.

| Category     | Percentage |
|--------------|------------|
| Very High    | 3.98       |
| High         | 50.00      |
| Low          | 37.91      |
| Very Low     | 8.10       |
| **Total**    | **100.00** |

Certificated teacher have 53.98% professional competence ability in high category which means most of teachers can deliver learning content effectively so the learning goal can be achieved and students understanding about learning content can be useful for entering working world.

4. Discussion

From the regression equation (11), found that pedagogic and professional competence teacher’s have significant effect to teacher’s performance in learning process. It is corresponding to opinion [1], [7], [10], dan [18].

Based on tabel 3 and 4, the amount of teachers that don’t have good understanding about pedagogic competence and professionalism are almost 40%. Based on the result there must be a strategy in order to make the teachers understand about that two competences, so there will be an increase in amount of competent teachers. If all of the teachers have good understanding about pedagogic competence and professionalism, there will be an improvement in teachers’ performance quality in learning process in all subjects.

Tabel 5 showed that there are 45% teachers that don’t have good performance, it means the quality of learning process is quite low and can influence the education quality. If all teachers have a good performance, there will be an improvement in learning process in all subjects and the education quality.

Conclusion

The result from this research about effect of pedagogic competence and teacher’s professionalism to teacher’s performance can be concluded as below:

a. Relationship between variables model as stated by validator is valid based on previous theory.
b. Research instruments based on validity and reliability analysis are valid and reliable, so can be used in research process.
c. Pedagogic competence and teacher’s professionalism have significant effect to teacher’s performance in learning process.
d. Certificated teachers percentage that have performance, pedagogic competence and professionalism are average in high category.

5. Reference

[1] Abdullah Solichan 2012. *Nilai Komitmen Guru Pada Tugas*. 
Ahyanuardi 2018. Pengaruh Kompetensi Pedagogik Dan Profesional Guru Sekolah Menengah Kejuruan Pasca Sertifikasi Terhadap Komitmen Guru Melaksanakan Proses Pembelajaran. INVOTEK: Jurnal Inovasi, Vokasional, dan Teknologi Vol 18 No 1 (2018) hal 67-74.

Aritonang, Keke Thal 2005. Kompensasi Kinerja, Disiplin Kerja Guru dan Kinerja Guru SMP Kristen BPK Penabur Jakarta. Jurnal Pendidikan Penabur No. 04/Th.IV/Juli/2005.

Barnawi & Mohammad Arifin 2012. Kinerja Guru Profesional. Jogjakarta: Penerbit Ar-Ruzz Media.

Byars, L, & Rue, L.W 2000. Management (Skills and Application). Boston: Irwin McGraw Hill, pp 250.

Dedi Supriadi 1998. Mengangkat Citra dan Martabat Guru. Yogyakarta: Adicina Karya Nusantara.

Diaz, C. 1997. Unpublished Review of J.W. Santrock’s Educational Psychology. New York:McGraw-Hill.

Direktorat Tenaga Kependidikan 2008. Penilaian Kinerja Guru. Jakarta: Direktorat Tenaga Kependidikan, Ditjen PMPTK, Depdiknas, pp 20.

Djemari Mardapi 2012. Pengukuran, Penilaian dan Evaluasi Pendidikan. Yogyakarta: NUHA Medikan.

E. Mulyasa 2005. Menjadi Guru Profesional. Menciptakan Pembelajaran Kreatif dan Menyenangkan. Bandung: Rosdakarya

Indra Djati Sidi 2000. Pendidikan dan Peran Guru Dalam Era Globalisasi. Majalah Komunikasi, No. 25/Tahun VII/2000.

Jones, J., Jenkin, M., & Lord S. 2006. Developing effective teacher performance. London: Paul Chapman Publishing.

Landy, F. J., & Farr, J. L. 1983. The Measurement of Work Performance: Methode, Theory and Application. London: Academic Press, Inc, pp 412.

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

Riesminingsih 2013. Pengaruh Kompetensi dan Motivasi Terhadap Kinerja Guru SMA Yadika 3 Karang Tengah. Jurnal MIX, Volume III, No. 3, Oktober 2013. Pp 263 - 271

Ruth, D.C 2008. Key Competencies for Education in a European Context: narratives of accountability or care. European Educational Research Journal Volume 7 N° 3 2008.

Santrock J. W., 2011. Psikologi Pendidikan,(Terjemahan Tri Wibowo B.S). new York: McGraw-Hill Company, Inc. (Buku asli diterbitkan tahun 2004).

Suharsimi Arikunto 1990. Manajemen Pengajaran Secara Manusiawi. Jakarta: Rineka Cipta.

Undang-Undang Republik Indonesia Nomor 20 Tahun 2003 Tentang Sistem Pendidikan Nasional.

Wardan Suyanto 2005. Pendidikan Menengah Kejuruan Dengan Kurikulum Berbasis Kompetensi. Jurnal Pendidikan dan Teknologi, Volume 14, Nomor 1, Mei 2005.

Yohanes Sukamto, Pardjono 2016. Pengaruh Kompetensi Guru, Komitmen Kerja dan Motivasi Kerja Terhadap Kinerja Guru SMP Andalan di Sleman. Jurnal Penelitian Ilmu Pendidikan, Volume 9, Nomor 2, September 2016, pp 165 – 178

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