

Analysis of Teacher's Professional Competency in Students of Teacher Professional Education

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Abstract – Improving the quality of teachers should be a severe concern of universities, including the University of Lampung, by implementing higher education reforms to produce prospective teachers with good competencies. This study aimed to examine the professional competence of prospective teachers in educating students who took the Teacher Professional Education Course (PPG) at the University of Lampung. The study used a quantitative approach, using a research sample of 310 students of Teacher Professional Education (PPG) of the University of Lampung with a questionnaire data collection technique. The method of analysis used descriptive statistical analysis with the help of the SPSS-26. The results showed that PPG students in a reasonably good category were as much as 40%, 25% were in a suitable category, only 6% were in an excellent category, 5% were in an inferior category, and 24% were in the poor category. In addition, there was no difference in the competence of Teacher Professional Education (PPG) students even though they were controlled by gender, age, teaching experience, and employment status.

Keywords – teacher competence, teacher professional education students, professional teachers.

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1. Introduction

Education has an essential role for the next generation in increasing the quality of potential of human resources to ensure the progress of a nation [1], [2], [3]. Education also plays an important role in every human personal development [4], [5]. Education is a vehicle for students to gain knowledge and skills to improve the ability of Human Resources (HR), and to compete in the world of work globally [7].

So far, the government has done various strategies to improve the quality of teachers such as education and training programs and also non-educational programs. Those strategies belong to basic strategies. Nevertheless, those basic strategies carried out by Indonesia have not been well integrated, so a particular effort is still needed. Such effort is known as the professional program or professional teacher education (PPG) which functions to improve teacher professionalism. The PPG program pursued by the government is hoped so it will produce professional teachers who have high graduate competence that can be competitive [8].

The competencies possessed by teachers in Indonesia are still relatively low, so it has not been able to lift the quality of education in Indonesia as it is expected [9], [10], [11]. The results of scientific studies from abroad and domestic as well, show that for almost 20 years, the condition of education in Indonesia has been stagnant at the lowest position in the world [12]. The quality of teachers is the main problem in education governance in Indonesia. This refers to the results of the Teacher Competency Test conducted by the Ministry of Education and Culture. There is no indication of improving the quality of teachers in Indonesia. The results based on the Teacher Competency Test show that the national average is only 53.02 or below the minimum competency standard set at 55.0. However, up to the present time, the research to see the competence of prospective professional teacher students in Indonesia is still rare.

This research is hoped to attract the Indonesian policymakers so they create a comprehensive policy that teachers need-based.

2. Literature Review

A set of prerequisites is required to be a professional teacher. One of the prerequisites is readiness. Readiness is one of the very important dimensions for professional teachers. Readiness is a person's ability to practice something both mentally and physically directly in the real life. Readiness is the state of a person's readiness to react or respond and the level of development of maturity or maturity that is favorable for practicing something [13]. Teachers are professional educators with the main task of educating, guiding, directing, training, assessing, and developing students in early childhood education, formal education, and secondary education [14]. The teacher is also someone who can guide, direct, and foster students both physically and psychologically, making it easier for future civilizations through experiments on problems that arise in people's lives [15].

Readiness to become a teacher is a condition to be a professional teacher. The readiness is described by requirements as administrative, technical, psychological, and physical requirements. A professional teacher has to show more knowledge, skills, and attitudes than other workers. To become an Indonesian professional teacher, a teacher is hoped to meet minimum qualifications. According to Suteja [16], there are several requirements of professional teachers, namely, a) having the talent to become a teacher, b) having the expertise to become a teacher, c) having good and integrated skills, d) having a healthy mentality, e) having a sound healthy body, f) has extensive experience and knowledge, g) has the spirit of Pancasila, and h) a good citizen.

The requirements of professional teachers are a) able to develop their personality, b) master the educational foundation, c) master subject matter, d) compile teaching programs, e) implement teaching programs, f) assess results and teaching and learning processes, g) organizing teaching program, h) conducting school administration, i) cooperation with teachers and the community, j) conducting simple research for the implementation of teaching.

Being a teacher is not an easy thing to do because the teacher not only conveys learning in class but also directly directs and shapes the character of students. The role of teachers in the education sector includes preparing for individual needs of education, empowering the community through education, optimizing the national education system, improving the quality and relevance of education, and making adequate education quality assurance.

The teacher's roles are as a/an 1) instructor, she is a person who teaches science to her students, 2) educator, she is a person who educates her students to have a good behavior that meets the norms prevailing in society, 3) mentor, she is a person who directs her students to keep staying on the right track according to educational goals, 4) as a motivator, she is a person who provides motivation and enthusiasm for her students in learning, 5) role model, she is a person who provides an example and an excellent example to her students, 6) administrator, she is a person who records the progress of her students, 7) evaluator, she is a person who evaluates the learning process of her students, and 8) inspiration, she is a person who inspires her students to have a goal in the future. The teacher's roles explained above are in the line of context broader [16].

The readiness of student-teacher candidates to become teachers is measured using indicators of willingness to become teacher candidates based on Law no. 74 of 2008. There are four competencies that a teacher should have a) pedagogic competence, which is the ability of a teacher to manage learning which includes an understanding of students, evaluating results, designing and learning, and developing students to actualize various potentials they have, b) personality competence, which is the teacher's ability to manage himself, c) professional competence, which is the ability of a teacher to master learning materials broadly and deeply, guiding students and meeting the competency standards set by the National Education Standards, d) social competence, which is the teacher can make a good relation to student and society.

Among the four competencies of Indonesian teachers, one area needing improvement is their professional competence in scientific structures, concepts, and principles, based on their field of study. The results of Disas [18] show that with the existence of educational policies regarding the development and improvement of the teaching profession, the position of teachers is increasingly shaded by legal sources. With the reality of Teacher Professional Education, teachers become more knowledgeable and professional teachers. To ensure clarity, the authors present the following research question: What is the profile of student-teachers in PPG programs? and Are there any differences in teacher competence by gender, age, teaching experience, and employment status?

3. Method

This study uses a quantitative descriptive correlation approach, which is a technique designed to determine the effect of independent variables on certain variables.

The independent variables are gender (X1), age (X2), length of teaching (X3), and employment status (X4), while the variable determined is the competency of prospective teachers (Y) as measured by their cognitive, affective, and psychomotor skills. The conceptual framework of this research is shown in Figure 1.

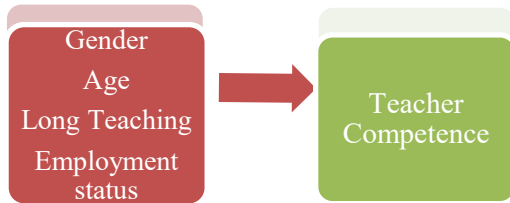


Figure 1. Conceptual framework

The population of this study was all teaching professional education students in positions at the University of Lampung, with as many as 478 people. Sampling was done randomly by distributing questionnaires to students, and 310 participants complete the questionnaire. The data collection tool is a questionnaire on teacher competence based on a Likert scale model adapted from the instrument developed by Cheffer, Ritto [19]. This instrument was developed by the duties and responsibilities of the teacher so that it is expected to describe his professionalism. The instrument was tested first to determine the quality using up to 30 respondents. Data analysis and presentation were carried out using SPSS version 26.

4. Result

Based on research conducted on Professional Teacher Education (PPG) students at Lampung University, it can be described as follows.

4.1. Descriptive Analysis

Description of the data is based on gender, age, learning experience, and employment status. In addition, in describing the competency variables, the researchers grouped these variables concerning the Type II Benchmark Assessment, where competencies were divided into five categories, namely very good, good, quite good, bad, and naughty [20].

• Gender

The distribution of research respondents by gender is presented in Figure 2.

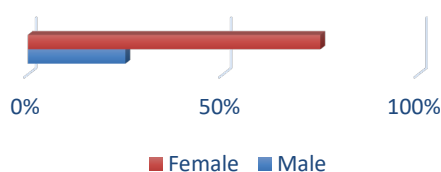


Figure 2. Gender of respondents

Figure 2 shows that of the total research respondents, which amounted to 310 respondents, there were 77 respondents or 25% of respondents who were male, and there were 233 respondents or 75% of respondents who were female. Thus, most of the respondents in this study are female.

• Age

The distribution of respondents based on age research is presented in Table 1.

Table 1. Distribution of Research Respondents by Age

No.	Age Group	Formulas	Age Scale	Frequency	Percentage
1	Young	$X < M - SD$	$X < 32$	42	14%
2	Intermediate	$M - SD \leq X < M + SD$	$32 \leq X < 42$	220	71%
3	Old	$X \geq M + SD$	$X \geq 42$	48	15%
Total				310	100%

Table 1 shows that of the total 310 respondents, there are 42 respondents or 14% of respondents aged less than 32 years, 220 respondents or 71% of respondents aged 32-42 years, and 48 respondents or 15% of respondents who 42 years of age or older. Thus, most of the respondents in this study were in the age range of 32-42 years or belonging to the middle age group.

• Teaching Experience

The distribution of respondents based on teaching experience is presented in table 2.

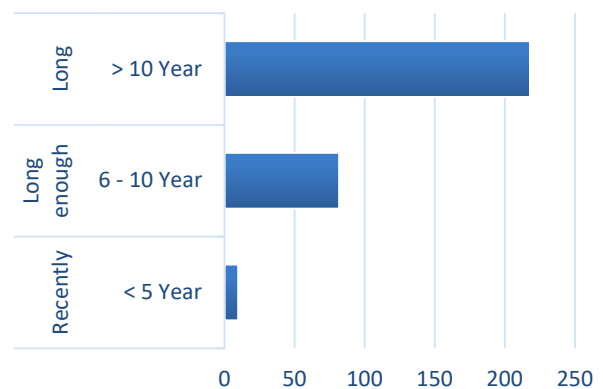


Figure 3. Distribution of Research Respondents Based on Teaching Experience

Figure 3 shows that of the total 310 respondents, there are ten respondents, or 3% of respondents, who have less than five years of teaching experience, 82 respondents, or 26% of respondents, have teaching experience in the range of 6-10 years, and 218 respondents or 70% of respondents who have more than ten years of teaching experience.

Thus, most of the respondents have more than ten years of teaching experience, or it can be said that they have long teaching experience.

- Employment Status

The distribution of respondents based on employment status is presented in Table 2.

Table 2. Distribution of Research Respondents Based on Employment Status

No.	Employment status	Frequency	Percentage
	Government Employee Teacher Employment		
1	Agreement	4	1%
	Private School		
2	Permanent Teacher	79	25%
	Honorary Teacher at		
3	Public School	53	17%
4	Civil Servant Teacher	174	56%
	Total	310	100%

Table 2 shows that of the total research respondents, which amounted to 310 respondents, there were four respondents or 1% who had employment status as a government employee employment contract teacher, 79 respondents or 25% of respondents who had the position of a private school foundation permanent teacher, 53 respondents or 17% of respondents who have honorary teacher status in public schools, and 174 respondents or 56% who have civil servant teacher position. Thus, it can see that most of the respondents in this study have employment status as civil servant teachers.

4.2. Assumption Test

In this section, the authors present prerequisite tests which include the normality test and homogeneity test, as follows.

- Normality test

The normality test was performed using the Kolmogorov-Smirnov (KSZ) test. Based on this residual normality test, data can be said to be normal if the Asymp value. Sig. (2-tailed) $p > 0.05$. On the other hand, if $p < 0.05$, the data distribution is not normal (Field, 2018). The calculation of the normality test in this study was carried out using SPSS version 26 software with a summary of the results as follows.

Table 3. Data Normality Test

Variable	Score	Asymp. Sig. (2-tailed)	Information
Gender	0.34	0.2	Normal
Age	0.36	0.2	Normal
Teaching experience	0.4	0.2	Normal
Employment status	0.39	0.2	Normal

Based on Table 3, it is known that the statistical value of Kolmogorov-Smirnov by sex is 0.34; based on the age of 0.36; based on the teaching experience of 0.4, and based on the employment status of 0.39. where with the Asymp value. The signature (2-tailed) for each variable is 0.2 ($p > 0.05$). This means that the data on each variable is normally distributed.

- Homogeneity Test

The homogeneity test was carried out to determine the similarity of the variance of the population (sample), which was normally distributed. Homogeneous data assumes similarity of contention for the ANOVA test [21]. Data is said to be homogeneous if the probability (sig.) is more significant than alpha 0.05. On the other hand, data is inhomogeneous if the possibility (sig.) is less than alpha 0.05. The following summarizes the results of testing the homogeneity of research data using SPSS version 26 software.

Table 4. Homogeneity Test

Variable	Sig.	Information
Gender	0.19	Homogen
Age	0.34	Homogen
Teaching experience	0.94	Homogen
Employment status	0.31	Homogen

Based on the homogeneity test results in Table 4, it is known that all data have sig values > 0.05 . All data have homogeneous data variances based on gender, age, teaching experience, and employment status.

4.3. Data Analysis

Based on testing the assumptions of data analysis, it is known that teacher competencies based on gender, age, teaching experience, and employment status are all normally distributed and have the same or homogeneous data variance. The prerequisites for the Independent Sample T-test and ANOVA are met. Testing the data with the Independent Sample T-test was conducted to determine whether there were differences in teacher competencies based on gender. In contrast, the ANOVA test was conducted to determine differences in teacher competencies based on age, teaching experience, and employment status. The following is a complete description of the results of data analysis using SPSS version 26.

- Teacher Competencies by Gender

Hypothesis Formula I

Ho = There is no difference in teacher competence by gender.

Ha = There is a difference in teacher competence by gender.
 Decision-Making Basis
 1) If the significance > 0.05, then Ho is accepted.
 2) If the significance is < 0.05, Ho is rejected.

Results of Hypothesis Testing I
 We are testing the hypothesis of differences in teacher competence by gender using the Independent Sample T-test. The following are the results of teacher competency testing based on gender.

Table 5. Independent Samples Test

		Independent Samples Test								
		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
Competency	Equal variances assumed	1.729	.190	-1.328	308	.185	-3.116	2.347	-7.734	1.502
	Equal variances not assumed			-1.218	113.787	.226	-3.116	2.557	-8.183	1.950

Based on the Table 5 Independent Sample T-test output above, we can see that the significance value is 0.185 > 0.05. This means that Ho is accepted. Thus, it can be said that there is no difference in teacher competence by gender.

Ha = There is a difference in teacher competence based on age.

Decision-Making Basis
 1) If the significance > 0.05, then Ho is accepted.
 2) If the significance is < 0.05, Ho is rejected.

• Teacher Competencies Based on Age
 Formulation of Hypothesis II
 Ho = There is no difference in teacher competence by age.

Hypothesis II Test Results
 We test the hypothesis of differences in teacher competence based on age using the ANOVA test. The following are the results of testing teacher competence based on age.

Table 6. ANOVA Teacher Competencies Based on Age

ANOVA						
Teacher Competence						
	Sum of Squares	df	Mean Square	F	Sig.	
Between Groups	719.679	2	359.840	1.127	.325	
Within Groups	98024.092	307	319.297			
Total	98743.771	309				

Based on the Table 6 ANOVA test output above, the significance value is 0.325 > 0.05. This means that Ho is accepted. Thus, it can be said that there is no difference in teacher competence based on age.

Decision-Making Basis
 1) If the significance > 0.05, then Ho is accepted.
 2) If the significance is < 0.05, Ho is rejected.

• Teacher Competence Based on Teaching Experience
 Formulation of Hypothesis III
 Ho = There is no difference in teacher competence based on experience teaching.
 Ha = There is a difference in teacher competence based on teaching experience.

Hypothesis II Test Results
 Testing the hypothesis of differences in teacher competence based on teaching experience using the ANOVA test. The following are the results of teacher competency testing based on teaching experience.

Table 7. ANOVA Teacher Competence Based on Teaching Experience

ANOVA						
Teacher Competence						
	Sum of Squares	df	Mean Square	F	Sig.	
Between Groups	9.938	2	4.969	.015	.985	
Within Groups	98733.833	307	321.609			
Total	98743.771	309				

Based on the Table 7 ANOVA test output above, the significance value is $0.985 > 0.05$. This means that H_0 is accepted. Thus, it can be concluded that there is no difference in teacher competence based on teaching experience.

- Teacher Competence Based on Employment Status
Formulation of Hypothesis IV
 H_0 = There is no difference in teacher competence based on employment status.
 H_a = There is a difference in teacher competence based on employment status.

Decision-Making Basis

- 1) If the significance > 0.05 , then H_0 is accepted.
- 2) If the significance is < 0.05 , H_0 is rejected.

Hypothesis II Test Results

We test the hypothesis of differences in teacher competence based on employment status using the ANOVA test. The following are the results of teacher competency testing based on employment status.

Table 8. ANOVA Teacher Competence Based on Employment Status

ANOVA						
Teacher Competence						
	Sum of Squares	df	Mean Square	F	Sig.	
Between Groups	1870.853	3	623.618	1.970	.118	
Within Groups	96872.918	306	316.578			
Total	98743.771	309				

Based on the Table 8 ANOVA test output above, the significance value is $0.118 > 0.05$. This means that H_0 is accepted. Thus, it can be said that there is no difference in teacher competence based on employment status.

5. Discussion

The results of the analysis related to teacher competence show that 16 respondents or 5% of

respondents have competence in the inferior category, 75 respondents or 24% of respondents have competence in the wrong type, 124 respondents or 40% of respondents have competence in the pretty good category, 76 respondents or 25% of respondents who have competence in the excellent variety, and 19 respondents or 6% of respondents who have competence in the superb category.

Table 9. Teacher Competencies

No.	Competency Category	Formulas	Competency Scale Score	Frequency	Percentage
1	Very bad	$X < M - 1,5SD$	$X < 139$	16	5%
2	Bad	$M - 1.5SD \leq X < M - 0.5SD$	$139 \leq X < 157$	75	24%
3	Pretty good	$M - 0.5SD \leq X < M + 0.5SD$	$157 \leq X < 175$	124	40%
4	Good	$M + 0.5SD \leq X < M + 1.5SD$	$175 \leq X < 193$	76	25%
5	Very good	$X \geq M + 1.5SD$	$X \geq 193$	19	6%
Total				310	100%

Referring to Table 9, prospective teacher competencies are categorized into bad, good enough, good, and very good. This information is very important that all educational stakeholders should consider it to improve the competence of prospective teachers in the PPG program. This result is in line with Pangestika and Alfarisa [8] research which states that PPG graduates do not always necessarily have good competencies.

This PPG student also illustrates no gender difference in teacher competence. This is in line with Sunaryo, Zuriyah [17] research, which states that teacher competence is not influenced by gender but differs according to [21], saying that the female gender has better competence than the male gender. But in this study, it was found that there was no difference in the competence of prospective teachers based on gender. Still, teachers with excellent physical conditions would undoubtedly be more prepared to implement good learning. Likewise, teachers who have proficient skills will undoubtedly be better ready to implement knowledge by the applicable curriculum. In this study, gender was used to describe the teacher's physical, mental, and emotional conditions. However, it is different [22]; the presence of male teachers significantly affects the responses of elementary school-age children about negative qualities towards the opposite sex. In line with [23], that male teachers have academic knowledge, the development of theoretical knowledge appears to be much more empathic. Research by Mariyana [24] shows that male kindergarten teachers with the same educational background as high school or vocational school or the equivalent have a lower overall level of competence than female kindergarten teachers.

PPG students based on age have no difference, whether young, middle-aged, or old. This is in line with research [25], which states that teacher competence does not differ between young and old age, but different according to [26] saying that the young generation has better competence than old age because young and experienced teachers generally have a higher level of satisfaction than more senior and more experienced teachers. Younger teachers are not accustomed to paying more attention to the personal and social dimensions than to the academic aspect. This is in line with [27] that young workers generally have high expectations and ambitions. So, a teacher will go through a phase of high purpose.

However, in reality, some teachers may experience a decline in performance as they age. Young teachers should be more active in bringing about new changes to schools. It is very likely to affect performance because some teachers have lost the stamina to teach or create new learning models.

PPG students based on their employment status do not differ in incompetence whether they are civil servants (government), foundation employees, or contract employees. This is in line with research [17], which states that teacher competence is not determined by employment status, but differs by [28], who says that civil servants (government) have better competence compared to other employment statuses.

PPG students in positions based on length of teaching also do not differ in their competence, whether they have teaching experience of fewer than five years, 6-10 years, and those who are more than ten years. This is in line with research [6] which states that teacher competence is not affected by the length of teaching but differs according to [27], saying that education significantly affects competence.

6. Conclusion

In this study, the competence of prospective professional teacher (PPG) students was in the sound, reasonable, and bad categories, but still flawed and imperfect. Then there is no difference in competence based on gender, age, length of teaching, and employment status for PPG teacher professional education students in positions. So in the conclusion of this study, it can be used to encourage the government to manage professional teacher education (PPG) in places to improve the lecture process so that the output of students has excellent or excellent competence. Likewise, gender, age, length of teaching, and employment status cannot be used to measure teacher competence. The factor of being a teacher has a significant influence on the learning process. Age can present an obstacle if a teacher experiences mental decline and a reduction in their learning ambitions as they grow older. However, it can be an advantage if the various experiences gained can be used as learning and the teacher continues to develop himself. Because age can simply be a number if the individual maintains high ambitions for education.

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