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## Evaluation of Primary School Teachers' Pedagogical Competence in Implementing Curriculum

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### Abstract

Teachers play an important role in curriculum implementation and become one of the factors in it. The role of teachers in the implementation of curriculum is influenced by the competence they have. This study aimed to examine the correlation between pedagogical competence and teacher's teaching experience in Tomohon city primary schools. The study used the descriptive method with correlational study model. The data used in this study was secondary data based on the results of UKG 2015. The selected research subjects were primary school teachers in Tomohon especially in schools that had implemented 2013 Curriculum. The data analysis method used in this study was Pearson Product-Moment Correlation. The results of this study indicate that teaching experience and pedagogical competence are negatively correlated ( $r = -0.403$ ), and the correlation is significantly indicated by the p-value of 0.000. This means the longer the teaching experience, the less pedagogical competence are the teachers.

**Keywords:** *Evaluation, Curriculum implementation, Pedagogical Competence, Teaching Experience*

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## Introduction

The success of the curriculum implementation consists of three factors, which are people, programs, and processes.[1] In a further explanation, it states that "people involved in the curriculum can include students, teachers, administrators, consultants, state employees, university professors, parents, lay citizens, and political official interested in education".[1] This confirms that one of the factors that play a role in the implementation of the curriculum is the teacher.

Teachers are one of the most influential factors in curriculum implementation.[2] This implies that teachers have an important role in curriculum implementation<sup>3</sup> and contribute to the success of the curriculum.[4,5,6] The role of teachers in curriculum implementation is influenced by various factors. These factors are teachers' readiness; teachers' competence, which includes knowledge, skill, and attitude;<sup>7</sup> teachers' motivation;<sup>8</sup> knowledge and ability;<sup>3</sup> perception;<sup>9</sup> and confidence.[9-11] One of the factors influencing teacher's role is competence. Competencies that need to be possessed by a teacher encompass the personality, social, professional, and pedagogical competence. In further review, competencies related to the management of learning which covers the process of designing, implementing and evaluating learning outcomes are grouped into pedagogical competence. In this case, the review will look more specifically at the teacher's pedagogical competence. This study selects pedagogical competence for evaluation because of its relation to the three main activities of curriculum implementation which are the design, implementation, and evaluation. This is also supported by the opinion of Saondi and Suherman[12] which states that pedagogical competence is an understanding of the design, implementation, and evaluation of learning.

Pedagogical competence is an important thing in implementing learning. Febrianis, Muljono, and Susanto[13] said that the teachers' knowledge and skills are not enough to well-equip them for teaching. Another opinion also states that teachers who are competent in learning materials will not succeed in teaching if they cannot convey their knowledge to their students.[14] This means that various knowledge and skills must also be equipped with the ability of teachers in managing learning so that learning materials can be delivered properly and achieve the expected learning objectives.

Pedagogical competence can be interpreted as the minimum professional standard teachers need to fulfill their professional roles.[15] It is also defined by Madhavaram & Laverie in Suci & Mata [15] as a person's ability to use and incorporate tangible sources (such as books, articles in software and hard form) with intangible resources (such as knowledge, skill, and experience) to achieve efficiency and / or effectiveness in pedagogy. Febrianis, Muljono, and Susanto[13] also stated that pedagogical competence is a special competency that differentiates teachers from other professions and demonstrates the ability of teachers to organize learning materials so that they can be easily understood by learners. In addition, Liakopoulou[16] saw that the pedagogical competence of teachers as a technique used by teachers to save time and utilize various resources about theoretical principles and research data which then can be selected according to circumstances. In other words, pedagogical competence is the teacher's ability in understanding the concepts and principles of learning, and a curriculum that can be used in the process of planning, implementation, and assessment of learning.

Pedagogical competencies are described in some Government regulations. The definition of pedagogical competence according to Undang-Undang Nomor 14 Tahun 2005 on teachers and lecturers states that pedagogical competence is "the ability to manage learners' learning".[17] In more detail, pedagogical competencies are described in Permendiknas Nomor 16 Tahun 2007 on academic qualification standards and teacher's competencies. This rule explains about pedagogical competencies that need to be owned by kindergarten teacher until high school. The pedagogical core competencies that primary school teachers need to have are described in Permendiknas Nomor 16 Tahun 2007, which consists of 1) mastering the characteristics of learners from the physical, moral, social, cultural, emotional, and intellectual aspects; 2) mastering learning theories and principles of educational learning; 3) developing curriculum related to the subjects/fields of development that are supported; 4) organizing educational learning; 5) utilizing information and communication technology for the benefit of learning; 6) facilitating the potential development of learners to actualize their potentials; 7) communicating effectively, empathetically, and courteously with learners; 8) organizing assessment and evaluation of learning processes and outcomes; 9) utilizing the results of assessment and evaluation for the interest of learning; and 10) taking reflective action to improve the quality of learning.[18]

This study focuses on the four pedagogical sub-competencies, namely: 1) mastering learning theories and principles of educational learning; 2) developing curriculum related to the subjects/fields of development that are supported; 3) organizing educational learning (related to the application of learning methodology); and 4) organizing assessment of process and learning outcomes. The selection of these four competencies is due to the consideration of the pedagogical competence's aspect specification which related to the three main stages of curriculum implementation namely planning, implementation and

assessment. In addition, these four pedagogical sub-competencies can represent pedagogical competence as a whole in accordance with the definition of Undang-Undang Nomor 14 Tahun 2005 which states that pedagogical competence is the ability of teachers in managing learning. Supporting this, Asmara also defines pedagogical competence as "the ability to design, manage, and assess learning".[19]

Pedagogical competence is an important, required, and necessary competence of a teacher in his/her profession. However, the data of Teacher Competency Test (UKG) held in 2015 shows that the national average score for pedagogical competence is 52.37. This achievement is below the established standard of 55. To see more about the pedagogical competencies of teachers in curriculum implementation, an evaluation activity is needed. Evaluation of teachers' pedagogical competence is an evaluation based on quantitative approach. Evaluation model with the quantitative approach used is measurement model. The selection of this evaluation model is useful for assessing the pedagogical competencies that teachers have based on the value obtained through the tests.

One of the quantitative evaluation models is a measurement which is the oldest model in an evaluation. The developers of this model are Thorndike and Ebel. Thorndike states that "... the term evaluation is closely related to measurement".[20] In other words, evaluation is considered to be non-existent without measurement. This model includes a quantitative evaluation model because it emphasizes quantity and numbers. The measurement results of this model are expressed in the form of numbers. The size of the measurement expressed in a unit of a certain size can determine the magnitude of the property possessed by an object, person, or event. Measurements are made in the world of education, for example, to see the differences of each individual or in groups. These differences may be differences in interests, abilities, attitudes, or personalities. In other words, the object of study in this evaluation includes the cognitive or affective aspects.[20] The measurement results expressed in this model are obtained based on a test. The test is required to measure the nature of an object, person, or event expressed in the form of a number. The test results are then analyzed to see the differences of each individual or group.

Pedagogical competence will be reviewed further by looking at aspects of the teaching experience. Teaching experience is considered to support teachers' pedagogical competence. New teachers and experienced teachers have differences in managing learning. A survey of over 6000 new teachers resulted in approximately 41.6% of teachers who felt that they were not ready for classroom management.[21] In addition, experienced teachers have confidence in knowledge and skills in classroom learning and management compared to new teachers.[22] The teacher's confidence level will increase in learning when they have worked four to seven years.[23] The teacher's pedagogical ability also takes the time to change over seven years.<sup>24</sup>

Based on the background and identification described earlier, this study is to answer the research question, "Does the experience of becoming a teacher significantly correlate to the pedagogical competence of primary school teachers in Tomohon City?" Correspondingly, the aim of this study is to examine the correlation between pedagogical competence and teacher's teaching experience in Tomohon city primary schools.

## Research Method

This study uses a descriptive method with correlational study model. The use of the descriptive method is considered appropriate to support this study because it aims to describe the existence of phenomena based on empirical data.[25] Descriptions are performed systematically based on the facts of the phenomena under investigation. Furthermore, the intention of using correlational study in this research is to look at the correlation between two variables. This is consistent with the explanation of the correlational study presented by Ali[25] in which correlational studies are defined as a symmetrical or correlational relationship between variables moving in parallel (positively correlated) or opposite (negatively correlated). The variables of this study consist of teaching experience as an independent variable and pedagogical competence as a dependent variable.

The data used in this study is secondary data. Secondary data, as one of data source, is expressed as "an indirect source of data for data collectors".[26] In this study, the secondary data was taken based on the UKG in 2015. This data was taken by considering its capability to show all teachers' pedagogical competence test result, especially primary school teachers. Data collection is done through Lembaga Penjaminan Mutu Pendidikan (LPMP) in North Sulawesi province.

This study is aimed at primary school teachers in Tomohon city, North Sulawesi province. The population of this study is all primary schools in Tomohon city using the 2013 Curriculum. There are eleven primary schools that have been using the 2013 Curriculum in Tomohon city. Based on the collected data, the number of classroom teachers who took the UKG test is 107 people. The number of samples is the total number of the population. In sampling, there are eight incomplete samples for further analysis.

Therefore, the total number of samples is 99 which is the number of primary school teachers who have implemented the 2013 Curriculum.

Data analysis in this study was done by using Pearson Product-Moment Correlation to see a significant correlation between teaching experience and pedagogical competence in Tomohon City Primary Schools. It is appropriate because the Pearson Product-Moment Correlation technique is used to find the correlation between two continuous variables.[27]

## Results and Discussion

In general, the pedagogical competence of classroom teachers in terms of mastering learning theories and principles of learning, developing and implementing the curriculum, applying learning methodologies, and organizing process assessments and learning outcomes in Primary Schools, grouped by teaching experience is presented in Table 1.

Table 1. Total Number of Teachers and Pedagogical Competence Based on Teaching Experience

Teaching Experience (TE)	Total number of teachers	Average	Standard Deviation	Minimum Value	Maximum Value
TE ≤ 7 years	27	50,90	17,57	12,7	80,95
8 years ≤ TE ≤ 14 years	20	45,68	15,80	22,6	74,62
TE > 14 years	52	36,06	14,38	6,35	67,05

Table 1 shows that the number of teachers with more than 14 years experience is 52 people, followed by the 27 teachers who have less than 7 years teaching experience (TE) and 20 teachers who have 8 to 14 years of teaching experience. Based on the number of teachers, the highest number of teachers is in the group of teachers who have experience of teaching more than 14 years.

Based on the minimum value obtained, teachers with TE > 14 years earn the lowest minimum score, followed by teachers with TE ≤ 7 years, and then teachers with TE between 8 to 14 years. For the maximum value of these three categories, teachers with a TE ≤ 7 years achieve the highest maximum value of 80.95 while the teachers with TE > 14 years obtain the lowest maximum value. Thus, it can be argued that the longer the teacher's teaching experience, the lower the maximum value of pedagogical competence gained.

The teacher's pedagogical competence in terms of mastering learning theories and principles of learning, developing and implementing the curriculum, applying learning methodologies, and organizing process assessments and learning outcomes in primary schools needs to be reviewed. In general, the average pedagogical competence for teachers with TE ≤ 7 years is 50.90 and a standard deviation of 17.57. For experienced teachers with TE 8 to 14 years, the average pedagogical competence is 45.68 with a standard deviation of 15.80. Then, the teachers with TE > 14 years have the average pedagogical competence of 36.06 with a standard deviation of 14.38. This indicates that teachers with TE ≤ 7 years have higher average pedagogical competency than teachers with longer teaching experience. The maximum value in Table 1 shows the same pattern for these categories. Thus, it reinforces the view that the more experience that the teacher has in teaching results in the lower average acquisition of pedagogical competence in mastering learning theories and learning principles, developing and implementing the curriculum, applying the learning methodology, and organizing process and outcome assessments Studying in Primary School.

Table 2 shows that teaching experience and pedagogical competence are negatively correlated ( $r = -0.403$ ) and the correlation is significantly indicated by p value = 0.000 at  $\alpha = 0.05$ . The acquisition of a negative correlation means that the teaching experience variables and pedagogic competencies move in the opposite directions. In general, as the teaching experience of teachers getting longer, their pedagogical competence become lower in terms of mastery of learning theory and learning principles, curriculum development and implementation, application of learning methodology, and organizing process assessment and learning outcomes in Primary School. The correlation test between teaching experience and teacher pedagogical competence using Pearson Product-Moment Correlation test can be seen in Table 2.

Table 2. The Correlation between Teaching Experience and Teacher's Pedagogical Competence

		Pedagogical Competence	Teaching Experience
Pedagogical Competence	Pearson Correlation	1	-.403**
	Sig. (2-tailed)		.000
	N	99	99
Teaching Experience	Pearson Correlation	-.403**	1
	Sig. (2-tailed)	.000	
	N	99	99

An increased teacher experience should be accompanied by increased pedagogical competence gained in UKG. Experienced teachers have good classroom management skill, confidence in knowledge and skills in classroom learning, good control of the classroom, and understanding in the teaching they undertake. (21,22,23) Varrella24 also reveals that teachers' pedagogical ability requires time to undergo a change that is more than seven years old or, in other words, increases as teachers' experience increases.

The increased teaching experience of teachers should be accompanied by increased teacher pedagogical competence. However, the correlation between teaching experience and pedagogical competence in this research shows the opposite which is the negative result between the two of them ( $r = -0.403$ ). This means that the pedagogical competence of primary school teachers with long teaching experience in the aspect of mastering learning theory and principles of learning, curriculum development and implementation, application of learning methodology, and assessment of process and outcomes in primary school is low, while those with shorter teaching experience have higher pedagogical competence.

The reason for the low pedagogical competence of teachers with long teaching experience is assumed to be caused by the measures used in the UKG which based more on the knowledge of pedagogical competence. Knowledge of pedagogical competence leads to an understanding of teacher pedagogical competence linked to the understanding of design, implementation, and evaluation of learning. [12] However, the skills and attitudes of pedagogical competence are not measured in the UKG. Knowledge of pedagogical competence is certainly required in its application. Teachers can apply something when they are familiar or knowledgeable about it.[28] Ignorance of a thing will affect its application. In other words, the implementation process is impossible to take place without the knowledge of the subject.

The low pedagogical competence of the teacher with longer teaching experience can also be caused by the teacher's efforts to keep abreast in improving his/her competence. Walls, Nardi, Von Minden, and Hoffman[29] argue that teachers with more teaching experience rely more heavily on the practical knowledge they have made in designing, implementing and assessing learning. This means that teachers with long teaching experience tend to rely more on their years of teaching experience, thus less developing themselves by learning in order to improve their competence.

The pedagogical competence gained by classroom teachers needs to be developed, trained, and recalled to conform to the established standards. The low pedagogical competence of teachers with longer teaching experience is assumed to be caused by the lack of formal self-development activities for teacher undertaken by schools/principals, foundations, governments, or the teacher himself/herself. One of the development processes of teacher ability can be done through teacher training. Teachers are unable to develop a maximum pedagogical capacity in the absence of adequate teacher training. This is due to the limited training containers for teachers.

Training needs to be done on a regular basis and can be prepared by schools, foundations, or local government. Teachers' training can include pedagogical competence in terms of mastering learning theories and principles of learning, developing and implementing the curriculum in primary schools, applying the learning methodology in primary schools, and organizing an assessment of learning outcomes in primary schools. Hence, three main activities of curriculum implementation consisting of how teachers plan, implement, and assess learning can be seen.[5]

Training needs to be done so that teachers acquire pedagogical competence as a minimum professional standard. This is in accordance with the study submitted by Gliga in Suciú & Mata[15] where pedagogical competence is interpreted as the minimum professional standard to fulfill teachers' professional role. In addition, training to improve teacher pedagogical competence is useful so that teachers can learn to take advantage of various resources available to him/her and choose techniques and strategies in accordance with the state of learning to be implemented.

In addition to training activities, teacher competence development can be done through other formal activities, such as seminars, workshops, or other scientific activities/discussions. These activities can be undertaken on the initiative of the school/principal, foundation, or government on a regular basis. The principal as a school leader also needs to have the drive to develop the teacher in the school he/she

leads. In their study, Saondi and Suherman[12] emphasize the requirement of principals to provide opportunities for teachers to improve their knowledge and teaching skills and acquire new skills.

Activities such as those mentioned above can enable teachers to share experiences in solving problems encountered in teaching activities. Therefore, in addition to the principal/school's initiative in implementing teacher development activities, the foundations that overshadow schools and the government also need to take part in it.

The role of government in developing teacher competence has been stated in various rules. For example, Undang-Undang Nomor 14 Tahun 2005 on teachers and lecturers[17] states that the government and local governments are obliged to foster and develop teachers' competence and to provide budgets for improving the professionalism of teachers. In addition, educational units are also required to foster and develop teacher competence. This rule clearly states the role of government to develop teacher competence, but the realization of the implementation needs to be neatly arranged to run well and on target.

Teachers' self-development can also be done informally by themselves. Teachers who already have a lot of teaching experience definitely still require self-development as a life long learner and need to open themselves to various educational innovations that can support learning. Teacher self-development as a life long learner can be done through television, radio, newspapers, magazines, books, and other scientific publications.

Efforts to improve teacher pedagogical competence will certainly have an impact on advancing the implementation of the 2013 Curriculum. Poor pedagogical competence can hinder the implementation of curriculum as noted by Simbolon.[30] Thus, self-development to improve teacher pedagogical competence is needed to support the implementation of the 2013 Curriculum.

### **Conclusion and Recommendation**

The teaching experience and pedagogical competence of primary school teachers in Tomohon City are negatively correlated in a significant way. This means that as the teacher's teaching experience gets longer, his/her pedagogical competence becomes lower in terms of the four pedagogical sub-competencies reviewed in this study, namely: mastery of learning theory and learning principles, curriculum development and implementation, application of learning methodology, and organizing assessment of learning processes and outcomes in primary schools.

The proposed recommendation is to cater the need for teachers' self-development based on the initiative of the school/principal, foundation, government, or even from the teachers themselves. Also, the UKG needs to further assess the practical pedagogical competence of teachers. In the future research, it is necessary to perform direct observation for teacher's pedagogical competence and examine the rest of pedagogical sub-competencies and other competencies teachers need to have such as personality, social, and professional competencies.

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