

THE EFFECT OF SUSTAINABLE PROFESSIONAL DEVELOPMENT ON THE COMPETENCE AND PERFORMANCE OF ELEMENTARY SCHOOL TEACHERS IN LEARNING INNOVATION

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Abstract

The research aims to describe the effect of Continuing Professional Development (PKB) on the competence and performance of elementary school teachers in learning innovation, and analyze how much influence PKB has on the competence and performance of elementary school teachers in carrying out learning innovations. Quantitative research method with simple random sampling technique. The population is 116 people and the sample used is 90 respondents. The resulting instruments include: PKB planning, self-development, scientific publications and innovative works with indicators following and implementing training, workshops, seminars, making innovative works and scientific publications in teacher performance. While learning innovation is measured through learning programs, classroom management, mastery of teaching materials, use of methods, media and evaluation of learning. The application of reflective actions and the results of Classroom Action Research reports on a regular basis become a benchmark for more professional teacher performance. Statistical data shows that: 1) there is a positive and significant effect of the PKB variable on teacher competence by 9.28%, 2) there is a positive and significant effect of the PKB variable on teacher performance by 4.84% and 3) there is a positive and significant influence on teacher performance. Simultaneous PKB variable on teacher competence and performance is 14.12%. Continuing Professional Development has a significant influence on teacher competence and performance which can be designed, tested and measured by the relevant agencies and has a broad impact on the innovative culture of teacher learning during the pandemic.

Keywords: continuous professional development; teacher competence; teacher performance; learning innovation

INTRODUCTION

1. Preliminary

Education plays an important and strategic role in the development of a nation. Once the role of education is so important, the government continues to strive to improve the quality of education, and one of the determinants of the high and low quality of education is the teacher. Teachers are the spearhead in the learning process, who are at the forefront of educating the nation's life. The teacher is an educator who has a very large role in transferring knowledge as well as educating with positive values through guidance and example for students. Teachers also act as motivators, facilitators, innovators, organizers, administrators and evaluators. The success of learning depends on the ability of the teacher to organize and manage the class, the atmosphere of the class can be fun or not, the children can be active or passive, and whether or not the learning objectives are achieved, all determined by the teacher.

In the current era of the industrial revolution 4.0, where advances in science, technology and communication are increasingly advanced, as well as the Covid 19 pandemic which not only threatens safety and life, but also limits activities in all sectors, including the education sector. The impact of the Covid 19 pandemic on the Education sector is very real, namely changes in the implementation of teaching and learning activities, before the pandemic KBM was carried out 100% face-to-face, but during the pandemic KBM was carried out more online than offline. Many obstacles are faced when carrying out online learning, such as students being less enthusiastic in learning because of difficulties in understanding the material, signal problems while online, not all students have a gaway and many other problems. Teachers as the main component in the world of education are required to be able to keep pace with the progress of the development of science and technology today, and must be able to increase creativity to deal with problems caused by the Covid-19 pandemic, namely by continuing to innovate/update in learning. Related to the implementation of the 2013 Curriculum, the innovations that teachers must make in learning activities start from the planning, implementation and evaluation stages of learning. Teachers must be able to create meaningful and fun learning for students, by using innovative learning methods, models, and media according to the curriculum and by utilizing technology, information and communication, besides that teachers are expected to not only be able to use technology tools or applications, but also can develop learning media and apply them in accordance with the current conditions of the world of education.

To improve teacher professionalism and competence, especially teacher competence in implementing learning innovations, it can be done by implementing Continuous Professional Development (PKB). PKB is the development of teacher competencies that is carried out according to the needs of teachers, gradually, and continuously in order to improve their professionalism. The types of PKB consist of self-development activities, scientific publications and innovation works. Self-development activities are carried out through functional education and training or through collective activities of teachers. Through self-development activities, teachers have the opportunity to improve and apply their knowledge and competencies in implementing learning innovations from the material that teachers get from training and collective activities that teachers participate in. By creating innovative works, teachers can increase their creativity and competence by finding appropriate technology; finding/creating works of art; make/modify learning tools/props; and follow the development of the preparation of standards, guidelines, questions and the like. Meanwhile, by conducting scientific publications, teachers can improve reading and writing skills, integrate various ideas and present them systematically and add to the teacher's knowledge.

By participating in the PKB program, it is hoped that teachers will become professional teachers, and can improve teacher competence in implementing learning innovations. By increasing the competence of teachers, especially in developing learning innovations, it will automatically show the performance of teachers in carrying out these learning innovations. Teacher performance in developing learning innovations will determine success in the learning process, the

expected learning objectives will not only be achieved but become more effective and meaningful.

However, in reality, the implementation of this PKB has not obtained maximum results and has not been as expected. Even though teachers have carried out PKB, but have not been able to master all aspects of the PKB, for example in making scientific publications and scientific works, not all teachers can understand and make them. Awareness to carry out PKB is also still low, most teachers do PKB such as self-development, scientific publications and innovation works just to get credit scores as the main element in assessing credit scores so that teachers can move up the ranks, not awareness to develop their professionalism. In planning, implementing learning and evaluation, there are still many teachers who have not made learning innovations to the fullest. There are still many teachers who teach using methods, conventional learning models, namely learning is still teacher-centered, and the use of learning media is also still minimal and not all teachers use ICT for reasons of limited infrastructure and the difficulty of the internet network. In addition, the manufacture of learning tools is still less innovative and tends to be monotonous. Awareness of teachers to attend training related to PKB is also still relatively low, due to the reasons for the busyness of teachers and the cost to attend independent training.

This is also found in elementary schools in the Districts of Tembarak and Selopampang, where geographically these two sub-districts are close together and are located at the foot of Mount Sumbing, Temanggung Regency. Tembarak District is divided into 13 Elementary Schools and divided into 2 clusters, namely Gugus Bima and Gugus Dwija Bhakti, while Selopampang District is divided into 12 Elementary Schools which are divided into 2 clusters, namely the Pentas Group and the Kresna Gugus. Even though a Continuous Professional Development program has been made every year, its implementation and implementation has not been maximized. Especially in this pandemic period that demands the use of ICT in learning, there are still many obstacles that are encountered in addition to the ability of teachers to utilize ICT, but also the internet signal, due to the geographical condition of Temanggung which is in the form of mountains. The implementation of the PKB program has been implemented in all elementary schools in the Districts of Tembarak and Selopampang, but the results have not been maximized, based on data on the implementation of PKB obtained from the Coorwilcam Tembarak and Selopampang, the implementation of self-development has only been carried out by around 60% even though all teachers have been able to compile a self-development report. not maximal in applying it in learning activities, such as in the implementation of learning, namely planning, implementing and evaluating learning, there are still many teachers who use conventional models and methods, besides that the learning media used are still modest and simple, not optimal in utilizing ICT, on the grounds that limited infrastructure facilities and the difficulty of the internet network due to the geographical conditions of elementary schools in the Districts of Tembarak and Selopampang which are located in the mountains. Meanwhile, only 19% of those who do scientific publications and innovative works are done so that they can get credit points for promotion.

Especially with the current pandemic conditions, caused by the Covid 19 virus, the PKB program planning that has been made cannot be carried out optimally. Even the imposition of restrictions on community activities (PPKM) causes limitations for the community to socialize directly, as well as in the world of education which is greatly affected, learning is mostly carried out through PJJ and online. Continuing Professional Development is also mostly carried out online or in limited meetings, for example to attend training and workshops, teachers can only attend with zoom, google meet, teams and so on. As for the implementation of PKB related to classroom learning, teachers are strongly required to innovate and be creative in learning, by utilizing ICT, because teaching must be online, automatically teachers must master ICT, for example to create google classroom, google forms, and share/ make learning videos. Many teachers, especially senior / near-retirement teachers, find it difficult to innovate learning with the use of ICT, they more often give assignments via WA/SMS applications and the types of assignments are less varied, only telling students to read textbooks and then asking students to work on student worksheets. This of course makes students less enthusiastic and less able to understand the material, because it is not explained directly or does not use interesting media.

Based on the background of the problems described above, the following problems are formulated: 1) Does Continuous Professional Development affect the competence of elementary school teachers in learning innovation? 2) Does Continuous Professional Development affect the performance of elementary school teachers in learning innovation? 3) How big is the effect of Continuous Professional Development on the competence and performance of elementary school teachers in learning innovation?

With reference to the problems, the objectives of this study are: 1) To describe the effect of Continuous Professional Development on the competence of elementary school teachers in learning innovation. 2) To describe the effect of Continuous Professional Development on the performance of elementary school teachers in learning innovation. 3) To analyze how much influence Continuing Professional Development has on the competence and performance of elementary school teachers in learning innovation.

2. Literature Review and Theory

According to the (Ministry of Education and Culture, 2019), the notion of Continuous Professional Development is the development of teacher competencies which is carried out in accordance with the needs of teachers, which is carried out gradually, and continuously with the aim of increasing teacher professionalism. Meanwhile, according to (Payong, Marselus, 2011), professional development is a process where teachers both individually and together with others review, renew, and expand their commitment as agents of change in teaching goals, and where they learn and develop collectively. critical of their knowledge, skills and emotional intelligence for planning, thinking, and good professional practice with their students, co-teachers, and all parties involved in every stage of their teaching and learning process. In principle, Continuing Professional Development includes planning, implementation, evaluation, and reflection designed to improve the characteristics, knowledge, understanding, and skills of the teacher concerned. So that teachers will

make progress in their careers (Priatna, 2013). Based on the views of several experts, it can be concluded that Continuing Professional Development is the development of teacher competencies which is carried out in accordance with the needs of teachers which is carried out in stages, and continuously includes planning, implementation, evaluation, and reflection designed to improve teacher professionalism.

PKB elements consist of three types, namely self-development, scientific publications and innovative works (Mulyasa, 2013). Self-development activities consist of two types of activities, namely participating in functional training and participating in teacher collective activities (Tutik Rahmawati, 2013). While functional training can be in the form of courses, training, upgrading, and various other forms of training (Priatna, 2013). Scientific publications consist of presentations on scientific forums of research results or scientific ideas in the field of formal education, research papers, scientific review papers in the field of formal education and learning, popular scientific writings, and articles in the field of education that have been published in certain scientific journals or at least have been published and held seminars in their respective schools and book publications, in the form of textbooks, enrichment books and or teacher guidelines (Antonius, Poncé, Boulanger, Côté, & Gonze, 2014). Meanwhile, innovation works in the form of finding appropriate technology, finding or developing works of art, making or modifying learning/display/practicum tools and developing the preparation of standards, guidelines, questions and the like at the national or provincial level.

The definition of competence is contained in Article 1 paragraph 10 of Law No. 14 of 2005 concerning Teachers and Lecturers, where it is stated that competence is a set of knowledge, skills and behaviors that must be possessed, internalized and controlled by teachers or lecturers in carrying out professional duties. Competence can also be interpreted as knowledge, skills and basic values that are reflected in the habits of thinking and acting. Meanwhile, according to Broke & Stone, competence as "...descriptive of qualitative nature of teacher behavior appears to be entirely meaningful" (Mulyasa, 2013). This means that competence is a description of the qualitative nature of the behavior of teachers or education personnel that looks very meaningful. The competencies possessed by each teacher will show the real quality and professionalism of the teacher. So it can be concluded that teacher competence is a set of knowledge mastery. and abilities that must be possessed by teachers in order to carry out their work optimally, correctly and responsibly.

Learning innovation is an idea, idea or certain actions in the field of curriculum and learning that are considered new to solve educational problems (Sanjaya, 2010). The definition of innovation in the Big Indonesian Dictionary is the introduction of new things, new discoveries that are different from those that already exist or that have been known previously in the form of ideas, methods or tools. So from this understanding, innovation is synonymous with something new, both in the form of tools, ideas and methods. The main goal of the learning innovation is to make learning more fun and meaningful. From the several notions of learning innovation above, learning innovation can be interpreted as a new effort in the

learning process, using various methods, approaches, facilities and an atmosphere that supports the achievement of learning objectives.

Based on the understanding of competence and learning innovation above, it can be concluded that teacher competence in learning innovation is a set of mastery of knowledge and abilities that must be possessed by teachers in order to carry out their work optimally, correctly and responsibly in carrying out the learning process, using various methods, approaches, facilities and an atmosphere that supports the achievement of learning objectives.

Teacher performance is the result of work that is closely related to the implementation of duties as a professional teacher (Wahyuni, Christiananta, & Eliyana, 2014). Teacher performance is the ability of teachers to demonstrate their skills or competencies in the real world of work. The real world of teacher work is student learning in classroom learning activities. Teacher performance is all the results of the teacher's efforts in delivering the learning process to achieve educational goals, which includes all activities related to his duties as a teacher. So it can be concluded that teacher performance is the result of work achieved by a teacher in carrying out the task of educating, teaching, guiding, directing, training, assessing, and evaluating students. The performance of professional teachers is reflected in the efforts made by teachers in developing learning innovations, where with these innovations learning objectives can be achieved and become more meaningful. The performance of a teacher in learning innovation can be seen from the achievements obtained by a teacher, how a teacher in carrying out the learning process is by applying innovative, student-centered and unconventional learning models and methods, using innovative, attractive learning media by utilizing ICT and involving students in its use, as well as evaluating learning outcomes and providing follow-up to the evaluation of learning, and the work obtained by a teacher.

METHOD

This study uses a quantitative approach. Quantitative research is a systematic scientific study of parts and phenomena and their relationships. The aim is to develop and use mathematical models, theories and/or hypotheses related to natural phenomena. While the method used is the correlation method. Correlational research is to explain causal relationships and test hypotheses, this study will use causal relationships between variables. According to (Sugiyono, 2010) causal relationship is research directed at investigating causal relationships based on observations of the effects that occur with the aim of separating the direct and indirect effects of a causal variable on the effect variable. In this study, the causal variable is the Continuous Professional Development (PKB) variable on the variable of increasing teacher competence and performance in learning innovation.

The population in this study were all elementary school civil servant teachers in Tembarak and Selopampang sub-districts totaling 58 primary school civil servant teachers in Tembarak district and 58 primary school civil servant teachers in Selopampang district. So the total population in this study was 116 teachers. In this study, the sample was taken using the Simple Random Sampling technique, or random sampling, and the number of samples was 90 people.

The instrument used is a closed questionnaire with a Likert Scale measurement of three instruments, for the instrument variable X (Continuous Professional Development), the instrument for the variable Y1 (increasing competence in learning innovation) and the instrument variable Y2 (teacher performance in learning innovation). The questionnaire contains questions or statements that will be filled out by respondents. The variables to be measured are translated into variable indicators. Then the variable is used as a starting point for compiling instrument items which can be in the form of questions or statements.

To analyze the data in this study used descriptive analysis and statistical analysis using SPSS V26. Before processing the data with SPSS, it was first tested for normality, linearity, heteroscedasticity, multicollinearity and hypothesis testing. This model is used to determine the effect of the independent variable on the dependent variable.

RESULTS AND DISCUSSION

a. PKB Simple Regression Test Results with Competence

Table 1
PKB t-test results with competence

Model	Unstandardized Coefficients		Standardized Coefficients		t	Sig.
	B	Std. Error	Beta			
1	(Constant)	54.896	4.373		12.555	0.000
	X	0.259	0.074	0.349	3.499	0.001

From the results of the independent samples test above, it is obtained that $t_{count} = 12,555$ Sig (2-tailed) of 0.000. This means that t_{count} t_{table} is 12,555 1,986, and the value of Sig (2-tailed) < 0.05 , then the hypothesis test is H_0 is rejected and H_1 is accepted, i.e., there is a significant effect between PKB on teacher competence.

b. PKB Simple Regression Test Results with Performance

Table 2
PKB t-test results with competence

Model	Unstandardized Coefficients		Standardized Coefficients		t	Sig.
	B	Std. Error	Beta			
1	(Constant)	57.478	3.685		15.599	0.000
	X	0.184	0.062	0.299	2.941	0.004

From the results of the independent samples test above, it is obtained that $t_{count} = 15,599$ Sig (2-tailed) of 0.000. This means that t_{count} t_{table} is 15.599 1.986, and the value of Sig (2-tailed) < 0.05 , then the hypothesis test is H_0 is rejected and H_1 is accepted, i.e., there is a significant effect between PKB on performance.

c. PKB F Test Results with Competence and Performance

Table 3
PKB F t-test results with competence and Performance

ANOVA ^a						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	670.833	2	335.416	7.158	.001 ^b
	Residual	4076.556	87	46.857		
	Total	4747.389	89			

From the data above, it is obtained that the F count is 7158 with a significant level of 0.001. With $\alpha = 0.05$ and degrees of freedom (df) $v_1 = 90$ ($n - (k+1)$) then Ftable 2.71 is obtained. Due to the Fcount $>$ Ftable ($7.158 > 2.71$) and the significance value $<$ 0.05 ($0.001 < 0.05$) then H_0 is rejected and H_1 is accepted, meaning that the PKB variable has a significant and joint effect on Competence and Performance.

d. Partial Determination Test

Table 4
Partial Determination Test (Beta Coefficient x Zero-order)

Model	Unstandardized Coefficients	Std. Error	Standardized Coefficients	t	Sig.	Correlations			
						B	Beta	Zero-order	Partial
1	(Constant)	15.479	11.881	1.303	0.196				
	X-Y1	0.359	0.157	0.266	2.291	0.024	0.349	0.239	0.228
	X-Y2	0.264	0.189	0.162	1.394	0.167	0.299	0.148	0.139
	Y1-Y2	0.389	0.080	0.470	4.846	0.000	0.517	0.461	0.440

Variable X to Y1 = $0.266 \times 0.349 = 0.0928 = 9.28\%$

Variable X to Y2 = $0.162 \times 0.299 = 0.0484 = 4.84\%$

Variable Y1 to Y2 = $0.470 \times 0.519 = 0.2429 = 24.29\%$

e. Partial Determination Test R Square

Table 5
Partial Determination Test of R Square

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.376 ^a	0.141	0.122	6.845

From the data above, the coefficient of determination is 14.12%, which means that PKB has a simultaneous (together) effect of 14.12% on teacher competence and performance. While the remaining 85.88% is influenced by other factors not observed in this study.

The results of the study indicate that Continuing Professional Development has a positive and significant influence on teacher competence and performance in

learning innovation, this influence can be seen in learning programs prepared by teachers in accordance with learning objectives and the current pandemic situation, classroom management, mastery of teaching materials, use of methods, media and evaluation of varied learning and utilize ICT in learning. Implementation of reflective actions and evaluation after learning activities, as well as conducting Classroom Action Research periodically and making Classroom Action Research reports.

The teacher carries out self-development after attending the training/seminar/workshop, and applies the knowledge gained in the training/workshop in learning. Teachers can create innovative works and conduct scientific publications after participating in Sustainable Professional Development.

CONCLUSION

The results of the study indicate that the PKB program that has been implemented in the Districts of Tembarak and Selopampang has a positive influence on the competence and performance of teachers in carrying out learning innovations, while the major effects are as follows:

- a. Hypothesis testing, using a simple regression test for the PKB variable on the competency variable, obtained $t_{count} = 12,555$ and the Sig (2-tailed) value of so that $t_{count} > t_{table}$ is $12,555 > 1,986$, and the value of Sig (2-tailed) $< 0,05$, then the hypothesis test is H_0 is rejected and H_1 is accepted, that is, there is a positive and significant effect of the PKB variable on teacher competence of 9.28%.
- b. Hypothesis testing, using a simple regression test for the PKB variable on teacher performance, obtained $t_{count} = 15,599$ Sig (2-tailed) of 0.000. it means that $t_{count} > t_{table}$ is $15,599 > 1,986$, and the value of Sig (2-tailed) $< 0,05$, then this hypothesis test is H_0 is rejected and H_1 is accepted, that is, there is a positive and significant effect of the PKB variable on teacher performance by 4.84%.
- c. Meanwhile, from the results of the multiple regression test of the PKB variable on the competence and performance of the researcher, it was obtained that F Count was 7158 with a significant level of 0.000. With $\alpha = 0,05$ and degrees of freedom (df) $v_1 = 90$ ($n - (k + 1)$) then $F_{table} 2,71$ is obtained. Due to the value of $F_{count} > F_{table}$ ($7,158 > 2,71$) and the significance value $< 0,05$ ($0,000 < 0,05$), then the hypothesis test is H_0 is rejected and H_1 is accepted, there is a simultaneous positive and significant influence on the PKB variable on competence and performance. teachers by 14.12%.

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