



MONITORING AND E-COACHING AS THE COACHING ALTERNATIVE OF CERTIFIED MATHEMATICS TEACHERS OF SMP IN YOGYAKARTA

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Abstract

The existing studies have resulted a coaching model for certified mathematics teachers of junior high school using Mathematics Coaching Program (MCP). In this coaching program, mathematics teachers were given the opportunity to convey, discuss, and solve the problems associated with learning mathematics. At the end of each meeting, the teachers were given the task to apply the learning model that is an alternative for the problem solution in the field. With this training, teachers implement training materials using learning model chosen in each school. As teachers implement the model, the monitoring was held by the trainers and principals. At that time, the teachers still received coaching using social networking media through email (e-coaching). By e-coaching, without waiting for the next meeting, the teachers received the necessary guidance. The coaching results indicate that the competence of junior high school math teacher who have been certified is improved. Before getting the coaching program, the mean value of teacher was at 43.695 which means "intermediate" level. After getting the coaching program with MCP model, the mean value of professional competence becomes 73.2 which is "high" level. After being tested using t-test, it is obtained that $t_{hit} = 14,095$. The result shows significant difference before and after the professional competence received the coaching program using MCP model which is followed by monitoring and e-Coaching (MEC). Regarding to the mean value, MCP model which is followed by the MEC is effective to be used to improve teachers' performance, in this case is, to increase teachers' professional competence.

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INTRODUCTION

Development of human resources (HR) can be reviewed according to two aspects, namely quantity and quality. The development of human resources in terms of quantity refers to the amount of human resources that should be increased, while the development of human resources in terms of quality concerns on the development of human resources that is determined by education, health, and economy.

The paradigm on the evolving development has shifted. In the past, the development was only focused on the economic development, but currently, the development is focused on the development of education. Education will be able to develop human resources in order to acquire the ability to manage natural resources (*SDA*).

Assessing the quality of education cannot be separated from the existence of teachers because they play significant role in the education and highly contribute in improving students' learning outcomes. Teachers is still the spearhead in education, and therefore, the government through the Law of the Republic of Indonesia Number 14 Year 2005 on Teachers and Lecturers (*UUGD*) states that teachers and lecturers have a strategic function, role, and position in national development in education.

As an effort to foster the competitiveness, the quality of education needs to be improved. The quality improvement on education includes the improvement on the teachers' quality: in addition to seven other educational standards. Furthermore, improving the quality of education depends on the performance of teachers, especially teachers who are professionals. The professional teachers must constantly improve themselves in their duties. This study is limited only to the quality improvement of education from the development efforts of certified teachers.

In *UUGD*, teachers must have academic qualifications, competencies (pedagogical, personality, social, and professional), and educator certificates in realizing the goal of national education. Teacher competence is

acquired through professional education. Until 2013, the education profession by the government was conducted through direct mechanism, portfolio, and Teacher Education and Professional Training (*PLPG*). The government is obliged to conduct training and teacher development that include coaching and professional development and career. The existing studies show that only professional competence that still needs attention: namely the need to get sufficient coaching program. For all this time, the development has not been systematically conducted; there will be training only if there is a request from the mathematics Teachers Council (*MGMP*). However, after the training, there is no sustainable follow-up program, for example by monitoring. Therefore, the right of teachers to obtain a sufficient coaching/training is neglected. As a result, the professional competence of teachers is in the average level. The training that is implemented in this study used the model of MCP, followed by monitoring and e-Coaching (*MEC*).

In regard to this situation, the research problems are formulated as follows.

1. How can teacher coaching model with MCP followed by MEC improve the professional competences of certified mathematic teachers of junior high school in Yogyakarta?
2. How is the effectiveness of the product dealing with the efforts to increase the professional competences?

The study objectives of this research are:

1. to know that the implementation of coaching model using MCP followed by the MEC as the teacher training model that fits the needs of certified math teachers of junior high school in Yogyakarta.
2. to know the effectiveness of the model used to enhance the professional competence of certified mathematic teachers of junior high school in Yogyakarta.

Literature Review

Education is a conscious and deliberate effort to create a learning atmosphere and learning process so that learners are actively developing their potential to have spiritual

power of religion, self-control, personality, intelligence, noble character, and skills needed by them and society. (By Law No. 20 of 2003, article 1, paragraph (1)). Philosophically, Ki Hadjar Dewantara (KHD) wrote that educational efforts to humanize humans humanely. The statement means that students should be guided in accordance with their nature. Education merely facilitates the development of the students' talent in accordance with the existing nature, and keeps away the destructive elements from outside that can inhibit or even kill the talent of the students. (Tauchid. 2004; 20).

Educator is the one working as teachers, counselors, tutors, lecturers, instructors, facilitators, and other professions which are in accordance with their specialization as well as participating in education (Article 1, paragraph 6) by Law No. 20 of 2003). Teachers are professional educators with the primary task of educating, teaching, guiding, directing, training, assessing, and evaluating students on formal early childhood education, basic education, and secondary education. Article 1 (1) by Law No. 14 of 2005)

Teachers' competence is a qualitative picture of the nature of teachers' meaningful behavior, i.e rational behavior to achieve the required objectives related to the expected conditions (Mulyasa, 2007: 25). In essence, standard of competence and certification of teachers is an attempt to receive quality teachers and professionals who have the competence to carry out school functions and objectives in particular and the purpose of education in general. (Mulyasa. 2007: 17). Professional competence deals with the mastery of subject they teach. The better mastery teachers have, the better they can deliver the materials.

Teacher training is an effort to improve the quality of teachers which is done effectively and efficiently to obtain better results in the learning process. Teacher training is directed at the development of teachers on four core competencies which will support the development of teaching profession, namely pedagogical, personality, social, and professional

competencies. Basically, training is held to fulfill the teacher needs to be able to support their career.

Various trainings are directed to develop teacher professionalism consisting of: self-development, scientific publications, and innovative work (PERMENNEGPAN and RB No. 16 of 2009 ps. 1 point 5). Self-development consists of: functional training and collective activities of teachers. The example of functional training is training course. The examples of collective activities of teachers are seminars, workshops, and panel discussions both as participants and as speakers.

Mathematics Coaching Program

Mathematics Coaching Program (MCP), as in other coaching program, is intended to prepare the long-term teachers with high quality and make them able to develop professionalism. MCP coaching approach is based on the concept of trainers and teachers working together to improve the learning of mathematics for students (West.2003: 1). This cooperation includes cooperation in the development of lessons, team teaching, collaborative activities based on students' learning, and the continuation of the reflective practice cycle. The coach brings expert teams who have their own experiences and professional development to assist teachers in conducting the investigation based on the discovery and problems, student-centered mathematic learning, and the professional teachers to teach mathematics content. The final goal of the MCP is to increase student achievement in mathematics.

The coaching through MCP followed up by MeCprepares teachers, in this case, mathematics teachers to discuss problems faced in the field. At a meeting of the coaching, the problems faced by teachers are discussed, and resolved to get the alternative solutions. They also select the appropriate learning to be further applied in the field or at each school. At the time of implementation of the learning model, the monitoring is conducted by the coach or the school principal. By the time the teachers implement the chosen model which is developed

through social media networking via email (e-coaching). Therefore, even though the teachers were in the field, they could get guidance.

The relationship between Teacher Development and Performance

The study conducted in 2012 on teachers in junior high school mathematics teachers in Tamansiswa environment shows that the performance of the teacher, in this case the professional competence, was at the level of "intermediate". The development concept is still textual, not yet contextual, so the effort to realize the mathematical concepts to the children still needs to be pursued. This is because there was not any teacher coaching program at that time who had been certified. Therefore, teachers need to be given guidance related to their career development, such as simulation, monitoring and supervision.

A study conducted in 2014 on certified mathematics teacher in Yogyakarta also shows the model of development that was obtained by the certified teachers. The result of coaching model was not systematically carried out by LPMP, no guidance to teachers of mathematics, and it was only conducted if there was a request from mathematics MGMP. The result is that the pedagogic, social, and personality competencies are in a very high level, but professional competence is in moderate tendencies and classroom climate is in moderate tendencies. In analyzing the needs of the necessary coaching of teachers, the teachers chose coaching training model with MCP. This shows that the math teachers who have been certified expect a coaching to develop their professionalism (Sri Purnami, Ag. 2014: 447-454).

RESEARCH METHODS

The approach used in this research was the Research and Development (R & D), which began with the preliminary study and was followed by creating the model. The created model was a coaching model of certified mathematics teachers of junior high school in Yogyakarta. The model is Mathematics

Coaching Program which was followed by monitoring and e-Coaching (MCP-MEC).

This study involved the entire certified mathematics teachers of junior high school in Yogyakarta which was divided into: certified mathematics teachers in public schools, private schools affiliated with religion, and national private schools. The selected schools were SMP N 6 and SMP N 7 Yogyakarta, the chosen private Islamic schools were SMP PIRI 1 and SMP Muhammadiyah 2 Yogyakarta, the chosen Catholic private school were SMP PangudiLuhur 1 Yogyakarta, the chosen private Christian school was SMP BOPKRI 1 Yogyakarta, and the chosen national private school was SMP Taman DewasaIbuPawiyatan Yogyakarta.

The preliminary research indicated that the pedagogical, social, and personality competences in the level of "very high". The competence that still required coaching is professional competency. Therefore, data was collected by using a test technique.

Data analysis techniques in this study were divided into 2 (two). In the preliminary study, the data analysis used quantitative descriptive analysis. Whereas, in the development process needed to look at the effectiveness of the model result and to prove the different performance significance after the coaching model was implemented. Therefore, the difference of professional competence will be tested statistically by t-test.

RESULTS AND DISCUSSION

Results

Professional competence of the junior high school math teachers who have been certified before getting MCP coaching models which is followed by the MEC was at the level of intermediate, with the mean value of 43.7. The figure shows that there is a gap between expectation and reality related to the professional competence. After getting the coaching model of MCP-MEC, the mean value of professional competence becomes 73.2, which is in high level. After the test on the difference

between two mean values using pre-test posttest design, the value shows $t_{count} = 14,095$, $dant_{tab.} = 2,819$. Therefore, the coaching model of MCP-MEC is effective to be used to improve the professionalism of teachers in terms of professional competence. And it means that there is compatibility between expectation and reality related to the competence of mathematics teachers who have been certified.

Discussion

The purpose of this research is to improve the performance of teachers, especially the improvement of professional competence by conducting coaching program for certified mathematics teachers of junior high school. Based on the needs analysis of the coaching model, the model MCP with MeCis chosen by teachers. Prior to coaching program implementation, the professional competence is in "intermediate" level. After getting the coaching model of MCP-MEC, the professional competence is increased in "high" level. In the

implementation of this model development, no monitoring is done by the coach and principal. In addition, there is an e-coaching program so that the teachers still obtain guidance to carry out the learning in each school. This model is effective and it is proved by the statistical test analysis on the difference between two mean values. Therefore, the result is significant.

CONCLUSION

The coaching program from mathematics teachers using MCP models which is followed by the MEC is able to significantly improve the professional competence of certified mathematics teachers of junior high school. This can be seen by the increase of mean value significantly, from 43.7, which is still far from expectation, becomes 73.2 which already meets the expectations of professional competence that must be owned by a certified math teacher. It means that coaching program with MCP-MEC meets teachers' expectations about coaching.

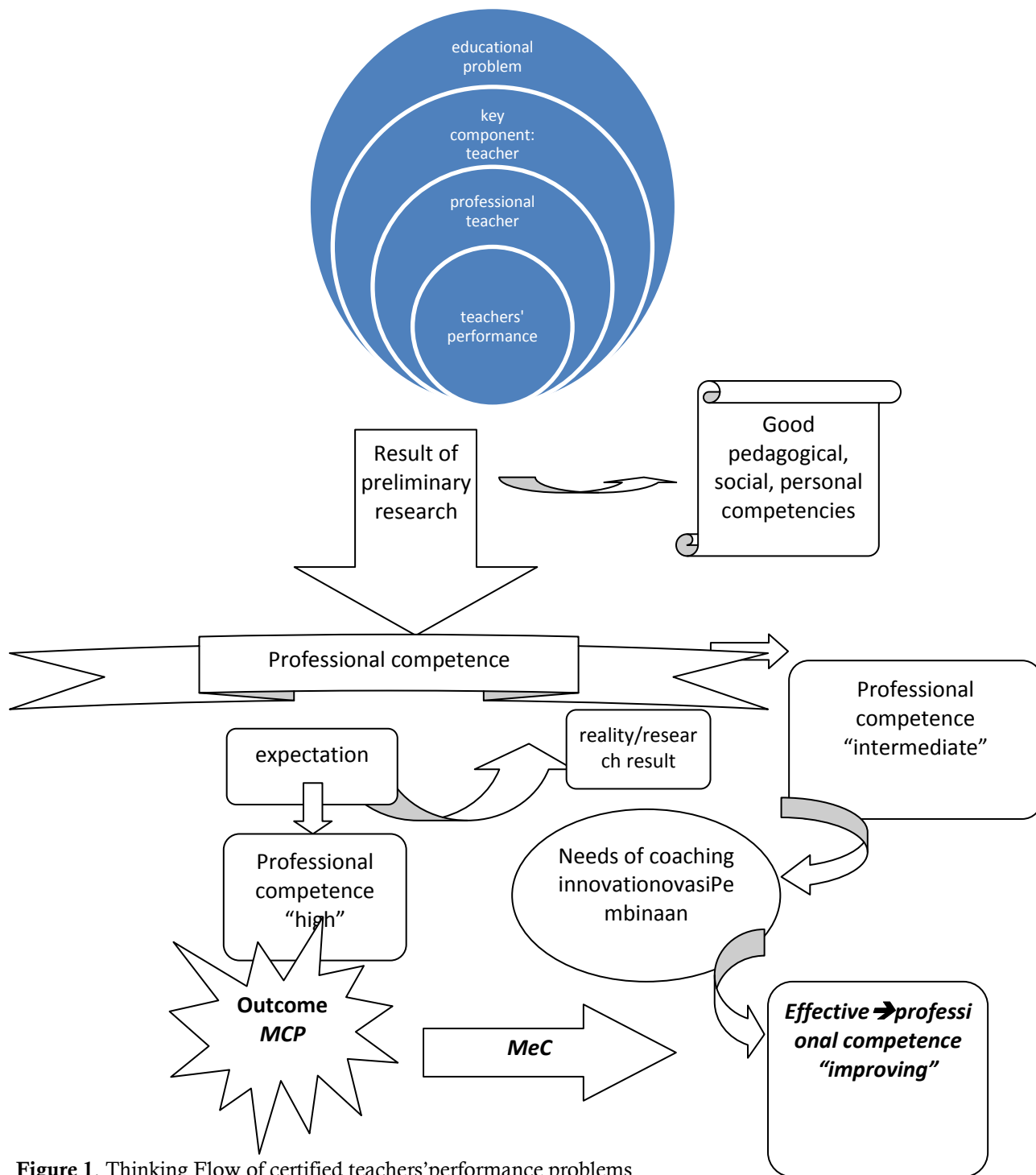


Figure 1. Thinking Flow of certified teachers' performance problems

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