

Mathematics Teacher Professionalism Development Through CPD Car in Junior High School In City of Semarang Indonesia

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Abstract: *The main problem of this research are (1) how to make an effective management model of training and mentoring CPD CAR that can improve teachers's professionalism in a sense can improve the performance of mathematics teachers in Junior High School in City of Semarang?; (2) how is the possitive impacts of management model of training and mentoring CPD CAR against the result of studying of students in Junior High School in City of Semarang ?. This research's method is R and D (Research and Development) with experiment's research "pretest-posttest with control group design". Population used in this research is mathematics teachers in Junior High School in City of Semarang that have been certified. Sample is taken by sampling random technique by paying attention the school's status SSN, RSBI, and RSSN. The datas from teachers are taken by questionnaire method, test method, focused observation sheets, and interview guide supported by assessment form validator experts, practitioners, supervisors, monitors the FGD. Analysis of the data with descriptive statistical analysis, ANOVA and t-test with SPSS 16.0 and CFA SEM with LISREL 8.8. Research's results; (1) CPD CAR training model effectively can improve the mathematics teachers's professionalism in Junior High School in a sense can improve the performance, knowledge, understanding, and skill of the teachers about CAR that supports their professionalism; (2) CPD CAR training model has possitive impact in improving the result of studying of Junior High School's students because this training do management steps in training plan model function, function of the training and assessment functions mature training program. When in Indonesia applied the results of this study are continuously implemented CPD CAR training model then next will allow can improve the professionalism of teachers that affect to improve students' learning outcome.*

Keywords: development, professionalism, teachers, CPD, CAR

1. Introduction

Human resources in Indonesia is still low if we compare it with other countries. Based on survey's result HDI's report 2010 UNDP HDI, Indonesia has value of 0.600 and only ranked at 108 from 169 countries investigated (Klugman, 2010: 154). This low level of Human resources is caused by the low level of education's quality in Indonesia. The low quality of education includes learning quality that triggered by the low level of teacher's quality. All components in Indonesia should strive to improve the quality of the teacher because the teacher is the heart of education. The good and superior education depends on quality that reflected in the professionalism, performance, and competence of the teachers. To fix the education's quality, first depends on improving recruitment, training and development, social status, and working conditions of teachers (Dellors, 1996). If teachers do not have high performance and competence, then efforts to improve the quality of education can not be achieved optimally. The problem of performance and competence of teachers is always be a concern in management as it relates to the productivity of school organization. To realize professional mathematics teachers, competent with a high performance needs to do systematic effort, synergistic and sustainable according to its standard competence. Departing from that reality, it's very interesting to search and find strategy to address that problem, one of the efforts is implementing *Continuous Professionalism Development* (CPD), Classroom Action Research (CAR). CPD is an increasing of professional knowledge and a fixing of professional skill that consciously and continuously done by the teachers (Kemendiknas PMPTK, 2008). Next, Depdiknas (2009: 1) stated that teacher certification is a

certification process for teacher to educators who have met the requirements, aims to determine the feasibility of carrying out duties as a teacher in a professional educator. Teacher certification is done in the form of Teacher Portfolio Assessment, Teacher Education and Professional Training (PLPG) and the Professional Teacher Education (PPG). How is actually a portrait of a teacher's performance after the performance of the teachers are certified teachers increased? Is there any difference in teacher's performance that graduated in certified by portfolio compared by PLPG? Is there any difference in teacher's performance between various of status of schools including RSBI, SSN, and RSSN? Is there any difference in value of performance's component between pedagogic component, professional, personality and social? These need to be investigated. The main problem of this research is CPD model that can improve teacher's professionalism that means, it can improve mathematics post-certified teacher's performance based on competence in Junior High School. While this research question are : (1) How is the portrait of mathematics post-certified teacher's performance based on competence in Junior High School in City of Semarang? (2) How is the model of connection in factors that affect mathematics post-certified teacher's performance based on competence in Junior High School in City of Semarang? (3) How is the management model of training and mentoring (TM) CPD CAR that effectively can improve teacher's performance that means it can improve mathematics post-certified teacher's performance based on competence in Junior High School in City of Semarang? (4) How is the possitive effect of TM CPD CAR management models against the improvement of learning outcomes of mathematics in Junior High School in City of Semarang?

Self management in general study consists of three main ways, these are set goals, monitor and evaluate progress, and provide self-reinforcement (Uno, 2007: 44). In Uno (2007: 45), stated that there are two sources of motivation, which results (outcomes) that can be predicted from the behavior of doing and set goals as a personal standard for evaluating teacher performance. To perform the task well, teachers need a good basic teaching skills. Teacher coaching is defined as a series of efforts to help teachers, especially tangible professional services rendered by the principal to improve process and studying result of learners. Wiles in (Uno 2007: 169), states "*Eliot supervision activity is service exists to help teachers do Reviews their job better*". Campbell & South Worth (1992: 70) said that, "*An important aspect of organizational culture was the work of the principal*". An important aspect of the culture of the organization is the performance of teachers, staff and principals, and vice versa, the principal, staff and teachers can work optimally if the school created a conducive organizational culture. Walter and Stanfield (in Davis & Thomas, 1989) said that school's culture as a binding norm that consistently was values that keep the unity of the organization. Motivation is the drive, needs, desires and promptings within the individual (Nurtain 1989: 117). With the motivation to work, then the person's behavior focused on the achievement of organizational goals or completion of work, as proposed by Durbin (1984: 105), "*Work motivation usually mean effort expended toward organizational objective or work accomplishment*". McClelland (in Irawan 1994) also concluded that achievement motivation has contributed to 64% of a person's work performance. Mentoring and development for teacher's profession are directed to amplify teacher's competence basead on standard of teacher's competence that include pedagogic competence, personality competence, social competence, and professional competence (Yamin, 2006:223). As for how professional development can be done through MGMP forum, seminars, workshop, lesson study, training and development for example CAR training, further studies, etc. Development in four competences should be done continuously so teacher's professionalis will be increased. In UU RI No 14 Th 2005, explained that "*competence is a set of knowledge skills and behaviors that must be owned, lived, and controlled by the teacher or lecturer in performing the task of professionalism*". The concept of performance is an abbreviation of the kinetic energy. Performance is a output that comes from functions or indicators of occupation or profession in a certain time (Wirawan, 2009: 5). Understanding the performance of an overview of the level of achievement of the implementation of a program or policy activities in realizing the goals, objectives, vision, and mission of the organization is poured through a strategic planning organization (Moeheriono, 2009: 60). According to Robbins, performance as intercation function between ability (A), motivation (M), dan Opportunity (O), $Performance = f(A \times M \times O)$.

According to Kotter and Hesket (dalam Usman, 2008: 457), performance as work's result that comes from an employee in a certain time unit. So, performance is a real work, of a person or company who can be seen, counted in number, and can be noted at the time of acquisition. Hunsaker (dalam Usman, 2008: 457) gave formula as, $Performance = Ability$

$\times Motivation, Ability = Aptitude \times Training \times Resources$. Performance management is a way to get better results for organizations, groups, and individuals by understanding and managing performance against planned targets, standards and competence requirements specified (Moeheriono, 2009: 99). Good performance management should always pay attention to the factors that influence individual performance, group performance and organizational performance. According Wirawan, the performance of individual employees is the result of the synergy of a number of factors: environmental factors internal employees consists of the talent and personal qualities, creativity, knowledge and skills, competencies, work experience, object physical, state of psychology, work habits, work ethic, work discipline, work motivation, morale, work attitudes, job stress, job involvement, leadership & coaching, job satisfaction and loyalty; external environmental factors employee consisting of economic life, political life, social life, cultural and religious communities, and competitors; and internal factors consisting of vision, mission and goals of the organization, organizational policies, raw materials, technology, organizational strategy, management systems, compensation, leadership and coaching, capital, culture / climate organization, colleagues, the process : training & development (Wirawan, 2009: 7).

Based on the literature review in this research hypothesis : (1) Mean of mathematics post-certified teacher's performance is high; (2) There is a significant difference in teacher's performance between the certified graduates through portfolio and the certified graduates thorough PLPG; (3) There is a significant difference in teacher's performance between RSSN, SSN, and RSBI school; (4) There is a significant difference in value of teacher's performance component between pedagogic component, professional, personality, and social; (5) There is a significant influence in self management dan KDM (MP), quality of teaching (PB) teacher by principal, school's culture including climate of teachers working in schools (BD), training and development (PP) teacher and work achievement motivation (MK) on the performance of teachers (KG); (6) CAR CPD management model with the steps in the planning function of management training, the training function and function assessment training program can effectively improve the knowledge, understanding and skills of teachers CAR; (7) TM CPD CAR management model by management steps in training planned function, training and assessment function, effective training programs function that can improve teacher's performance; (8) TM CPD CAR management model with the steps in the planning function of management training, the training function and the function positively impact assessment of training programs that can improve the learning outcomes of students in Junior High School in City of Semarang. The purpose of this research is to address the main problems in the study and four research questions above.

2. Methods

This study is the overall about **R&D (Riset & Development)**. Research with quantitative research approaches. The first quantitative research examining teacher performance based on competency. The second quantitative research is ex post

facto quantitative research will examine factors that affect the performance of the teachers and the most dominant factor affecting the performance of teachers. Then proceed with the experiment Development "pretest-posttest with control group design". Variables consisted of independent variables / exogenous consisting of self-management and KDM, development of teaching quality of teachers by principals, Training and development of teachers, culture and school climate and achievement motivation work. The dependent variable / endogenous namely mathematics teacher performance SMP.

Analysis of the data in this study: (1) To analyze the performance level of teachers portrait done by descriptive statistical analysis, performance analysis of the mean point estimate, interval estimation of the mean performance analysis, ANOVA to determine differences in the performance of the component values and differences in teacher performance based on the status of school also test analysis of the differences and teacher performance based graduation sergur were calculated with SPSS version 16.0; (2) To determine the influence of the independent variables and the dependent variable to determine the dominant factors that affect the performance of the teachers used Structural Equation Modeling (SEM) Confirmatory Factor Analysis (CFA) with LISREL 8.8 software. (3) To determine the effectiveness of performance improvement TM CPD CAR and to know the positive impact of teachers, we use statistical t-test with SPSS version 16.0 software.

3. Result

- 1) The factors that affect the performance of teachers is self-management and KDM, coaching quality of teachers by principals of learning, training and development of teachers, school culture and climate as well as achievement motivation work.
- 2) Estimation of the mean value point on the teacher's performance statistics mean 85.78, the mean interval estimation of teacher performance value in the interval (85.04; 86.52) and the mean value of teacher performance is high. Mean values of personality components is higher than the mean value of the three other components of the pedagogic component, professional and social. There is no difference in the mean values of mathematics teacher's performance in Junior High School in City of Semarang between teachers who graduated with a portfolio and teachers who graduated with PLPG. Mean values of teacher's performance in Junior High School with status RSBI and SSN is higher than values of teacher's performance in Junior High School with status RSSN.
- 3) Relationship model of factors affecting the performance of the teacher demonstrated with models of structural equation;

$$KG = 0.62*PP + 0.084*PB + 0.19*MK + 0.066*BD + 0.33*MP,$$

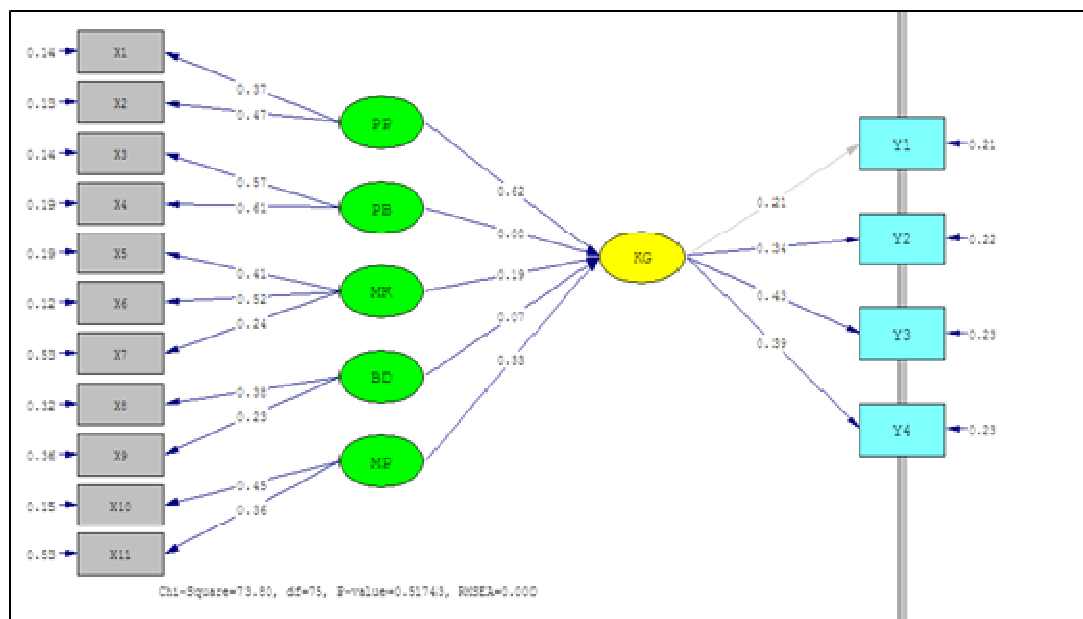
(0.30) (0.26) (0.25) (0.35) (0.22)

2.07 0.32 0.74 0.19 1.50

Errorvar.= 0.4, $R^2 = 0.53$ (0.25)

1.99

Image obtained relationship factors that affect the value of teacher performance;



Picture 1: Relationship model of factors that affect the performance of teachers

KG: performance of teachers
 PP : Training and Mentoring
 PB : Quality of teaching
 MK : Work achievement motivation
 BD : School's Culture
 MP : Self Management

The dominant factor affecting the value of the teacher's performance is a factor of training and development. (4) Model TM CPD CAR management can improve the performance of teachers indicated by SOP Academic and Organization (5) Model TM CPD CAR can effectively improve the professionalism of teachers in a sense can improve the performance of teachers and to enhance the knowledge, understanding and skills of CAR teachers; (5) Model TM CPD CAR has positive impact in improving the

student's learning outcomes in Junior High School in City of Semarang.

4. Discussion

- 1) Portrait of teacher's performance with mean value of mathematics post-certified teacher in Junior High School in City of Semarang has a high category. This illustrates that the government efforts to improve the professionalism of teachers sergur in the sense of improving their performance can be achieved.
- 2) The mean value of the components of personality performance higher than other components. This illustrates that the junior high school mathematics teacher in the city of Semarang in terms of acts of worship, became a teacher stability, emotional stability, maturity, wisdom, authority, exemplary attitude, morals, noble, discipline, compensation kesopan, honesty, responsibility, work ethic, ability to innovate and creativity and the ability to accept criticism and suggestions have been very stable.
- 3) Mean values in the junior high school mathematics teacher performance Semarang sergur which pass through the portfolio and through PLPG has no different. This illustrates that the process of passing through both sergur PLPG and portfolio do not make the problems associated with the performance of them;
- 4) Mean value of SSN Junior High School mathematics teacher's performance and RSBI is higher than the mean value of mathematics teacher's performance in RSSN Junior High School. This is probably because the RSSN mathematics teacher was busy concentrating to fix the quality of education in these schools that mostly student input is also much lower than the input SSN and RSBI.
- 5) The factors that affect the performance of self-management and the teacher is teaching the basic skills of teachers, the quality of coaching by the principal teacher of learning, training and development of teachers, school culture and climate as well as achievement motivation and work. Actually there are many other factors that affect the performance of Junior High School mathematics teacher, but because of the limitations in this study things then it just limited to just five factors. Training and development of teachers becomes the dominant factor affecting the performance of teachers, it is because if the teacher continued training and development included not only gain knowledge but also add to the skills needed in the professional development of teachers.
- 6) TM CPD CAR model in theory can improve mathematics teacher's professionalism in Junior High School in the sense it can improve teacher's performance because that training is done continuously and always try to update by giving effort to find critical problems that being faced by teacher in classroom and try to give effort to find the solution in teaching methods, teaching strategies, teaching approaches, media / learning aids, etc to be the best so that student learning outcomes and teacher performance both in the classroom and outside the classroom is the optimum result. TM CPD CAR model in theory can improve mathematics teacher's professionalism in Junior High School because this training is trying hard to achieve the training objectives

efficiently and effectively by performing the steps in the planning function of management training, the training function and function assessment of training programs.

- 7) M CPD CAR management model can effectively improve the performance of teachers and improve the knowledge, understanding and skills of teachers on CAR that supports professionalism, and a positive impact on improving student learning outcomes junior high school mathematics as a model TM CPD CAR is taking steps in the planning function of management training, executive functioning training and assessment functions of mature training programs and considering SOP Academic and Organizational.

5. Conclusion

- 1) Portrait of mathematics post-certified teacher's performance based on competen in Junior High School in City of Semarang is high;
- 2) Component of value against mathematics post-certified teacher's personality in Junior High School in City of Semarang is higher than component value of pegagogic performance, professional and social;
- 3) There is no difference between the mean value of mathematics post-certified teacher's performance based on competence in Junior High School in City of Semarang between graduates through portfolio and graduates through PLPG;
- 4) Mathematics post-certified teacher's performance based on competence in Junior High School in City of Semarang that its status is RSBI and SSN is higher than RSSN status;
- 5) Factors that affect mathematics post-certified teacher's performance based on competen in Junior High School in City of Semarang are self-management and KDM, coaching quality of teacher learning, training and development of teachers, school culture and climate as well as achievement of motivation and work.;
- 6) The most dominant factor affecting the performance of mathematics post-certified teachers based on competence in Junior High School in Semarang is a factor of teacher training and development
- 7) Management model TM CPD CAR by management steps in training planned function, training implementation function, and assessment functions with regard POS training Academic and Organizational SOP will be able to continue to improve the professionalism of teachers.;
- 8) Management model TM CPD CAR by management steps in training planned function, training implementation function, and and assessment functions can improve knowledge, understanding, and skill CAR of mathematics post-certified teachers in Junior High School in City of Semarang. ;
- 9) Management model TM CPD CAR by management steps in training planned function, training implementation function, and and assessment functions can improve mathematics post-certified teacher's performance based on competence in Junior High School in City of Semarang.;
- 10) Management model TM CPD CAR by management steps in training planned function, training implementation function, and and assessment functions

have positive effect in developing the studying result of students in Junior High School in City of Semarang. This research suggestion is if in Indonesia applied the results of this study are continuously implemented CPDCAR training model then the next will allow can improve the professionalism of teachers that affect to improve students' learning outcome.

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