

**Effectiveness of Monitoring and Evaluation System in Context of Continuous Professional Development of Secondary School Teachers as a National Professional Standard for Teachers in Pakistan**

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**Abstract**

*Effective monitoring and evaluation are essential to maintain the learning process and a prerequisite for sustainable education. This study was conducted to find out the effectiveness of the Monitoring and Evaluation (M &E) system in Continuous Professional Development (CPD) of Secondary School Teachers (SSTs) as a National Professional Standard for Teachers (NPSTs) in Pakistan. The effectiveness of this standard was analyzed in 181 Federal Government Secondary schools spread over all Pakistan. The performance of 249 secondary school teachers was observed by 131 principals and 17 Conveners of the Quality Audit Team. The program of (M&E) system was implemented by Federal Government Educational Institutions Directorate Rawalpindi during 2015-16. To find the effectiveness of the M&E System in CPD as an NPST, the Rating Scale for 131 Principals was designed to observe the performance of secondary school teachers in the said standard. Rating scales for secondary school teachers were used to find their self-opinion. Semi-structured interviews of Conveners were conducted. Data was collected by adopting a stratified sampling technique by taking data from all areas/regions, male, female, and secondary schools. Data collected was based on performance levels before and after implementation of the Monitoring and Evaluation system. A mixed-method was used for the analysis of data. The effectiveness of the M & E system and CPD was analyzed through paired-tailed t-tests and thematic analysis was done of semi-structured interviews. It was concluded that the performance level of SSTs improved after attaining CPD that also reflected the effectiveness of the M & E System in FGEIs. The study will be instrumental in modifying the system of monitoring and evaluation (M&E) in educational institutions. The results of this study will help to improve the performance of institutions and teachers in light of national professional standards.*

**Keywords:** Effectiveness Monitoring and Evaluation System, Professional Standard, Continuous Professional Development, Secondary School Teachers

**Introduction**

Continuous professional development (CPD) is a term employed to introduce all types of interventions in which teachers involve themselves during their careers. It includes all those functions that impact the classroom environment. CPD does dual roles. While defining CPD broadly is not only a question of how to organize training and education activities for professionals to develop their professional skills and competencies, but also how to identify competent and skilled professionals as part of a working community (Billett et al., 2008). CPD is considered necessary to adopt technology-based modern practices. Faculty with modern gadgets and best practices are necessary for the learning process. Effective participation in contemporary, technology-based, knowledge society implies added importance for voluntary learning and development by employees (Evers et al., 2011a; Maurer, 2002). Professional development is considered to be very important in maintaining and enhancing the quality of teaching and learning in schools (Craft 2000; Harland and Kinder 1997; Harris 2002). Evaluation of CPD is needed to find its success and effectiveness. This process will make awareness about the two: the first whether the CPD is effective in the objective and second it will give essential benefits to teachers in their practices (Knight, 2002).

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The process of CPD improves the knowledge and skills of teachers which results in students' achievement. OECD (2009) also claimed that teacher' professional development programs are highly correlated to students learning. In such a development program age and stage should be included (Khalil & Ul Haq, 2019). And those programs always add some addition to teachers: Knowledge, skills, proficiencies in a particular task, and some special types of characteristics. Another professional development is an ongoing process that is used to improve the students' outcomes and that's why Levin (2014) used the term professional learning as an alternate. The key term in developing our education is CPD and it is now included in every proposal (Guskey, 2002, p. 381). In addition, it is almost impossible to achieve our standard without developing our teacher's content and professional knowledge (Seyoum, 2011).

Certainly, the whole educational change depends upon the quality of CPD conducted as a professional standard of teaching faculty. It has different forms and its implementation is globally based. Further, the ultimate goals of these teachers' standards programs are to improve the students' ends (Danielson & McGreal, 2000; Darling-Hammond, 2001). Finland's education success is considered a standard model. And the main reason behind this is the use of a softer approach rather than adopted (PasiSahlberg, 2011). Changes always took place from the teaching community and the degree of professional training they achieved throughout their career (PasiSahlberg, 2011).

CPD (continuous professional development) is based on teachers' participation as active, responsible members of the professional community, efforts to engage in reflective practices, keep in pursuance of opportunities to grow professionally, and strives to establish collegial relationships to enhance the teaching and learning process. They possess and subscribe to a professional code of conduct.

<b>Knowledge and Understanding</b>	<b>Dispositions</b>	<b>Performance and Skills</b>
1: The significance of professional ethics and code.	1: Present the need-based practices in school/community.	1: Plan to follow Professional Development Standards and improves through professional institutions.
2: The basics of educational research and its methods which are important for continuous learning, and development.	2: Keep learning as a continuous process, does assessment and professional reflection.	2: Change the whole school into a productive learning environment by improving participation levels.
3: The innovations needed in teaching practice and method to develop a personal profile	3: Keep good professional relation, ethics & sharing culture with colleagues, and improves learning level	3: Engage in useful inputs for improvement of the teaching-learning process by adopting action research. Uphold ethical behaviors in teaching, learning, and assessment.

The National Education Policy (2009), as a national document of Pakistan which also emphasized establishing the standard for the existing education system in which teacher competencies and professionalism is one of the most essential. Further, the quality is never achieved if the proper institutionalized process of the evaluation system is not set up structurally and functionally (Government of Pakistan, 2009). Knowing this fact, the Ministry of Federal Education of Pakistan implemented a national standard for teaching in 2009. The standards were based on Teachers Assessment criteria in the Monitoring and evaluation system launched in 186 Federal Government Secondary schools. The effective application of CPD a national professional standard in Federal Government secondary schools is a reflection of the effectiveness of the Monitoring and Evaluation system.

The two main pertinent facets of M & E are Internal and External Evaluation. Both should be maintained side by side to improve the quality of learning and national standards. According to Briceno (2010) independence of the Monitoring and evaluation (M&E) system makes it more trustable and dependable. So it is necessary to develop a realistic model for M & E system which should be independent up to some extent and also reliable and legitimate in society. This system should sustain its intended objectives. As internal evaluators, principals and secondary school teachers themselves observed their performance levels concerning CPD before and after implementation of the M & E System. Conveners of Quality Audit teams as external evaluators observed the effectiveness of the M & E System through CPD effects and application.

**The objective of this document research:**

- a. To assess the effect of (CPD) on the performance of Federal Government Secondary teachers.
- b. To investigate the effectiveness of the Monitoring and Evaluation system (M & E) in Federal Government Secondary schools

**Research Hypothesis**

The research hypothesis of the study was as under:

**Ho<sub>1</sub>** There is no effect of (CPD) on the performance of Federal Government Secondary teachers.

**Ho<sub>2</sub>** There is no effect of the Monitoring and Evaluation system on the performance levels of Federal Government Secondary teachers (SST).

**Methodology**

**Research Design**

An ex-post-facto and co-relational design were used in this research study. In which qualitative and quantitative research approaches were adopted to compare and correlate the results. To investigate the effectiveness of the M & E System in Federal Government secondary schools, the program of the M & E system was implemented in 2015; it was assessed in the context of CPD and NPSTs in Pakistan. The application and effect of professional standards of CPD were analyzed before and after execution of the Monitoring & Evaluation system by observing the performance levels of SSTs, academic results, and document analysis.

**Research instrument**

Data tools and their interventions are as follow:-

1. The first five-point Likert Rating Scale for principals was designed to find out to effectiveness of M & E and CPD effects on the performance levels of secondary school teachers (SSTs). Principals of secondary schools observed the performance levels of secondary school teachers (SSTs) before and after the implementation of the Monitoring and Evaluation system. A total of 10 indicators were constructed and around each indicator, 3 questions were designed to uncover the performance of teachers around those indicators. The analysis of their opinions is analyzed in the light of the research hypothesis.
2. On a similar construct, a five-point rating scale for secondary school teachers was used for their self-opinion about the effects of CPD before and after implementation of the M & E System.
3. An interview schedule was also framed for interviews of Conveners of Quality audit teams to find secondary schools' performance on improving CPD.
4. Thematic analysis was done to find out central themes excluding the outliers. Main themes are divided into sub-themes to find the outcomes which would be interrupted into a data form. After reading the text of the interview again and again main themes, sub-themes were traced/underlined and outliers were identified. The common themes were marked in three categories: Agreed (A), neutral (N), or disagreed (DA). Responses of Respondents (R) were analyzed. The Documents analysis, content, and thematic analysis were made for interviews of Conveners, academic results, and quality audit reports.

**Analyses strategy**

Triangulation (Mixed Method) analysis was adopted to make the results more valid and reliable. Qualitative and Quantitative data were analyzed. T-test was used to find the difference in two means (before and after). Documents analysis, content, and thematic analysis were made for interviews of Conveners, academic results, and quality audit reports.

In this study document analysis was made to have a comparative analysis of academic achievements (academic results) and assessment reports of quality audit teams before and after implementation of the Monitoring and Evaluation system in Federal Government Secondary Schools. To evaluate the degree of the academic achievement level of Secondary Schools before and after & M/E system, Federal Board results of Secondary Schools (2016-18) were taken for analysis. To evaluate the last three years (2016-18) assessment reports of monitoring & evaluation were analyzed. Reports of M & E were utilized to determine the degree of change in the performance level of secondary schools and secondary school teachers after implementation of M & E.

**The population** of the study was comprised of 186 secondary school principals, 1781 secondary school teachers, and 26 conveners.

**Sample of the study**

131 Federal Government secondary school principals, 249 Federal Government secondary school teachers, and 17 conveners were a sample of the study. Stratified sampling technique was adopted to collect male, female samples randomly through 13 regions, 26 Resource centers present in four provinces of Pakistan. Academic results at the secondary level (FBISE) Islamabad were taken of years 2016-19.

**Validity & Reliability**

In this research study, research instruments were designed after studying and critical analysis of review of the literature and previous studies. Then instruments were validated through analysis and observations of ten educational experts. The validity of the test depends on the declaration of the experts' opinion in the relevant field (Khalil, 2016). As per their comments, the instruments were updated. Instruments were pilot tested; the reliability Cronbach alpha value was found 0.94. Skewness and kurtosis before and after the launching of research instruments were also found which fall between 0 and 1 which show sound normality of data.

**Data Analysis**

Data collected through Rating scale for Principals, teachers, and interview schedule for Conveners were then tabulated and decoded as per five-point Likert scale applied strongly agree:5 score, agree:4 scores, neutral :3 marks, disagree: 2 scores and disagree: 1 score. Through Grounded theory interview (inductive approach) statements were analyzed. To find the effectiveness of the M & E system through analysis of application effect of CPD NPSTs in Pakistan was found through pair t-test at 0.05 alpha value.

**Rating Scale for Secondary School Teachers (SSTs)**

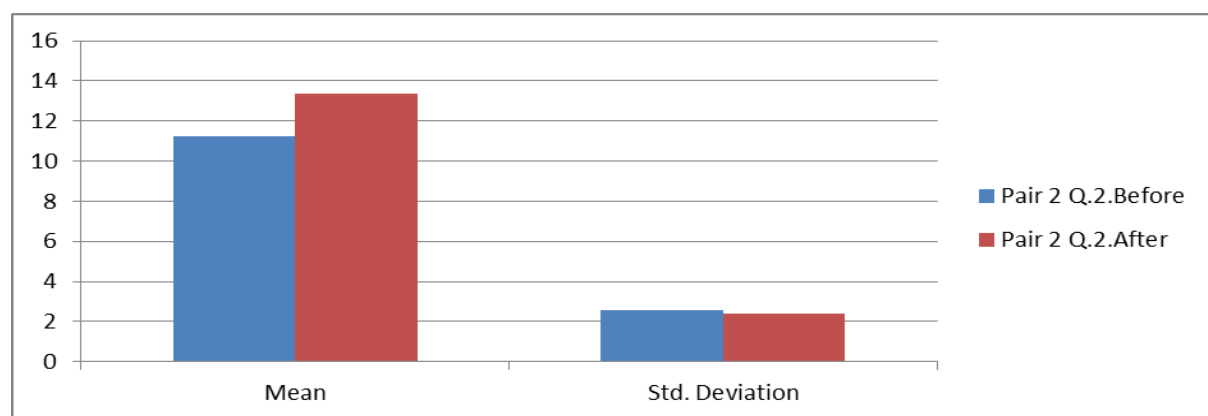
**Ho** There is no effects of (CPD) on the performance levels of secondary school teachers in Federal Government Secondary schools.

Secondary school teachers gave their self-opinion about the effect of CPD on their performance levels before and after implementation of the M & E system in Federal Government secondary schools

**Table -1**

*Showing the difference in performance levels of SSTs due to CPD before and after Application of M&E System*

		Mean	N	Std. Deviation	Std. Error Mean
Effect of CPD as NPST	After M&E	13.34	249	2.375	0.127
	Before M&E	11.24	249	2.560	0.137



**Paired t-Test**

Pair 2	Paired Differences			95% CI of the Difference		t	df
	Mean	Std. Deviation	Std. Error Mean	Lower	Upper		

**Paired t-Test**

Pair 2	Paired Differences						t	df	.000
	Mean	Std. Deviation	Std. Error Mean	95% CI of the Difference					
				Lower	Upper				
Q.2.After Q.2.Before	2.103	1.344	.072	1.962	2.244	29.274	349	.000	

Table shows, as per self-opinions of secondary school teachers, their self-performance is improved after implementation of monitoring & evaluation (M&E) system after attaining CPD an NPST in Pakistan as Mean=13.34 and SE=0.127 which is better than their performance levels before implementation of monitoring & evaluation (M&E) system implemented in Federal Government secondary schools as Mean=11.24 and SE=0.137.

The calculated t value is t=29.274 which lies in the rejection region on  $\alpha = 0.05$  as the table value is 1.968, therefore Null Hypostasis  $H_0$ , there is no effect of Continuous Professional Development (CPD) on the performance levels of secondary school teachers in Federal Government Secondary schools is rejected.

**Rating Scale for Principals**

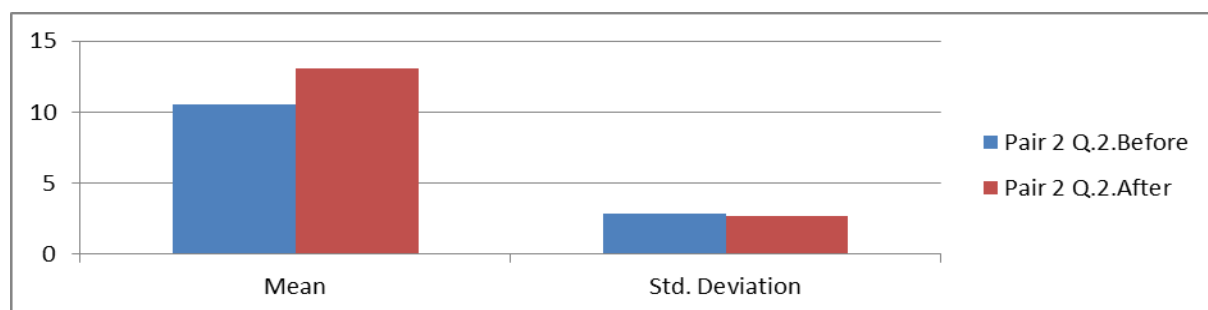
$H_0$  There is no effect of the implementation of the Monitoring and Evaluation system on the performance levels of Federal Government Secondary teachers (SST).

Principals observed the performance levels of SSTs in NPST CPD before and after implementation of the M & E system

**Table -2**

*Showing the difference in performance levels of SSTs due to implementation of M&E System in NPST CPD*

	Mean	N	Std. Deviation	Std. Error Mean
CPD NPSTs After M&E	13.11	262	2.653	.161
Before M&E	10.52	262	2.839	.173



**Paired t-Test**

After - Before	Paired Differences						t	df	P-Value Sig. (2-tailed)
	Mean	Std. Deviation	Std. Error Mean	95% CI of the Difference					
				Lower	Upper				
2.596	1.303	.079	2.440	2.752	32.731	249	.000		

The table shows that the performance level of secondary school teachers (SSTs) is improved after implementation of monitoring & evaluation (M&E) system in Federal Government secondary schools as Mean=13.11 and SE=0.161 which is better than the performance of secondary school teachers before implementation of monitoring & evaluation (M&E) system as Mean=10.52 and SE=0.173.

The calculated t value is 32.731 which lies in the rejection region on  $\alpha = 0.05$  as the table value is 1.968, therefore Null Hypostasis  $H_0$ , there is no effect of the Monitoring and Evaluation system on performance levels of Federal Government Secondary teachers (SST) is rejected.

**Thematic Analysis of Interviews by Conveners**

Conveners of Quality Audit Teams observed the performance levels of SSTs in the context of the effectiveness of the M&E system and the impact of CPD on their performance. Thematic analysis of the main themes of interviews was made. Main and sub-themes were counted and converted into percentages

**Analysis of Secondary School Teachers Professional Competence NPST**

NPST	Items Agree	Neutral	Disagree
CPD	Effect of CPD on performance levels	54%	18% 28

There is a positive effect of CPD on the performance levels of SSTs. 28% of conveners disagree on the effect of CPD on the performance levels of SSTs. There needs improvement in the CPD mechanism.

**Academic Results at Secondary level**

Overall GPA of Federal Government secondary schools raised from 3.30 to 4.10 that show the effectiveness of the M & E system and impact of CPD on the performance levels of SSTs.

**Findings**

Following findings were made

- a. As per the self-opinion of secondary school teachers, their performance levels improved in Continuous Professional Development before and after implementation of Monitoring & Evaluation (M & E).
- b. Performance levels of Secondary School teachers observed by principals showed improvement in the NPST CPD after implementation of Monitoring & Evaluation (M & E).
- c. There is a need to bring positive changes in CPD as Conveners pointed out some average effects of CPD in the performance of SSTs ( 28% found disagree).

**Conclusions and Discussion**

The above findings indicated that the performance of secondary school teachers in the context of CPD standards improves after the implementation of the Monitoring and evaluation system. It shows the effective impact of CPD in a secondary school as NPST for teachers in Pakistan. M & E system brought improvement in performance levels of secondary school teachers that show the effectiveness of the Monitoring and Evaluation system. The significantly improved student's academic achievements showed the effectiveness of CPD and the M&E System. Effectiveness of CPD proved as null hypothesis was rejected as they showed proactive teaching strategies as a result of improvement. Macsuga-Gage, Simonsen, and Briere (2012) described one of the traits of an effective teacher that he will engage the students with concrete evidence and always use effective classroom management strategies. There is also a need to make CPD better in its conduct.

Darling-Hammond et al. (2017) and Pianta et al. (2006), for reflective facilitation an intensive and brief professional development (PD) program should be launched. And this program will only be effective if teachers' motivation is there, and they intend to modify their practices. In all the practices the belief of the teacher is essential and it should be according to the demand of the subject ( Khalil, Khalil. & Ul Haq, 2019).In short, their inner discipline will only affect and make this program effective (Kennedy, 2016). CPD for in-service teachers would not be restricted to a secondary level only but at higher education, a proper mechanism for university and college teachers should be adopted along with applicable policy (Aslam, 2011).

**Recommendations**

- 1. Significance effectiveness of M & E systems showed that this program may be adapted for primary/ elementary and middle schools of the country with modifications.
- 2. For M & E reports proper software should be adopted to optimize its significance.
- 3. Results showed that teachers are less competent in using ICT. So, teaching-learning resources might be provided in the classrooms and teachers would be trained in the use of ICT in teaching.

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