

A Study to Investigate the Effectiveness of In-Service Training of Teachers for the Collaborative Practices

Muhammad Arshad Tariq

PhD Scholar, International Islamic University, Islamabad. Email: arshad.phdedu54@iiu.edu.pk

Professor Dr. N.B. Jumani

Dean, Faculty of Social Sciences, International Islamic University, Islamabad

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Abstract

This study focused on assessing the effectiveness of in-service training in developing teachers' values of collaborating with colleagues. Three research questions were drawn on the basis of national professional standards for the teachers and supported by the review of the related literature. The study utilized the convergent parallel mixed methods research design through which, firstly, the quantitative data and secondly, the qualitative data were gathered and mixed to address the stated research question. The five hundred and the eighty six teachers, two hundred and the eighty five head teachers and the nine master trainers were the participants of this study. The analysis of data yielded that the in-service trainings could not help in bringing up collaboration among colleagues. On the basis of these findings, it is recommended that there is a need for effective collaborative practices should be designed for the teachers to foster the culture of sharing knowledge and solving problems of teaching with the help of other colleagues. For further research there should be more research into how mobile phones can help teachers' connect/ collaborate with each other and how they can share best practices of collaboration.

Keywords: In-service Training; Professional development; Collaboration; Teachers

1. Introduction

Collaboration in teaching and learning process is the procedure of sharing successful experiences with the colleagues, schools and mentors for improving the teaching and learning projects and designs in the classroom environment and the school. Unfortunately, the teaching has become a profession that utilizes the concept of collaboration minimally (Derry & Schunn, 2005) although there is fact that teaching is a profession of relationships with students, parents, experts and colleagues (Anderson, 2010) in order to improve the students' academic achievements and mental development and thus enhance school performance (Blank & Kershaw, 2009). Therefore, there is dire need to develop the teachers professionally so that they could cover collaboration aspect of educational process.

The collaboration in teaching is the intentionally happening event of group associates for sharing some mutual objectives that builds trust and confidence (Gottesdiener, 2002; Jarman & McClune, 2007) in an organization to facilitate quality assurance (Honigsfeld & Dove, 2010) and assist schooling, teaching and learning, students' needs and achievements (Engelbrecht, 2004; Kochar-Bryant & Heishman, 2011). It organizes teachers' continuous learning, exchange of successful ideas and observations and construction of reciprocal feedback with colleagues that groom their trust and commitment (Meirink, Imants, Meijer & Verloop, 2010) and to improve students' educational achievements, assessment techniques, specific behavior, and parents participation and professional development of teachers (Mazur & Doran, 2010).

The collaboration with colleagues needs different and diverse communication and inter-personal skills and competencies such as taking and giving information, reinforcement and feedback because it develops positive way of thinking, open-mindedness and excitement for learning emotions (Perry, 2004). In fact, collaboration with colleagues demands respect, honor, dignity, rights, values and authority of associates for collaborative activities.

There are many versatile activities of collaboration such as consultation, cooperation, teaming, co-teaching and webbing that are embraced accordingly the context (Murawki, 2009). Because the open and civil discourse and the alternative interpretations of pedagogical issues enhance analytical judgment, critique, experimentation, inquiry and communication that provide rewarding edge to teaching practice (Loughram, 2006). Thus, the schools should plan a day of collaboration for teachers in which the purpose, structure, training and support for personnel manifest for cooperative

activities. However, the main hurdles to collaborative practices of teachers are the lack of time (Weindling, 2005) and workload (Saric, 2006). These obstacles hamper teachers' collaboration in primary and elementary schools. Therefore, these hindrances should be removed through the more support by the educational authorities, more classroom assistant and less classroom contact time.

The teachers in our setting do not utilize these activities to improve their practice. It is the responsibility of administration to provide facilities to all school personnel for openly collaborating with their colleagues to solve their problems and improve professional learning. In this perspective, the researcher intends to conduct an in-depth investigation into the effectiveness of in-service training of elementary school teachers for the collaborative practices.

1.1 *Statement of the Problem*

The study focused to investigate the effectiveness of in-service training of teachers for collaborative practices.

1.2 *Objective of the Study*

The study designed to aim at the following objectives as:

1. To explore the effectiveness of in-service training in developing the teachers' values of collaborating with the colleagues (intraschool) for the improvement in the practices.
2. To find out the effectiveness of in-service training in developing the teachers' values of collaborating with the other schools (interschools) for the improvement in the practices.
3. To investigate the effectiveness of in-service training in developing the teachers' values of collaborating with the mentor for the improvement in the practices.

1.3 *Research Question*

The following research questions were formulated to address the objective of the study.

1. How do teachers work together with colleagues to share successful professional experiences in order to improve the pedagogical practices at the classroom setting?
2. How do teachers work together with other school to share the practices for pedagogical improvements?
3. How do teachers work together with mentors to share successful professional experiences to improve the pedagogical practices?

1.4 *Significance of the Study*

The quality, status, and performance of teaching profession are boosted through professional development of the teachers. The professional development of the teachers is an aspiring theme that emphasis on teacher's professional disposition of working together with others professionals in order to improve professional practice of teaching in classrooms. Keeping in view the above-mentioned theme and gist of professional development, the current study carried out to investigate the effectiveness of training of elementary school teachers for the professional development. The empirical values of this research yielded insight into various spheres associated with policy making, administration, curriculum development, and operational research in real classroom environment, in-service training institutions and all the educational stakeholders for the enhancement of professional collaboration with colleagues. Above all, the conclusions of this investigation innervated a base line to all those interested in the progress of in-service training to plan and conduct further investigations.

1.5 *Delimitations*

This research was delimited to the following areas:

- 1) Public schools of the province of Punjab.
- 2) The effectiveness of in-service training was measured on the training during the time period 2009-2012. The effectiveness of the in-service was determined from the selected sample of teachers and head teachers by using the questionnaire and interview about the practices they learnt in these sessions and now utilizing in the classroom.
- 3) The disposition domain of sharing successful professional experiences with others particularly with colleagues

as mentioned in the National Professional Standards for Teachers in Pakistan (2009) the Standard No. 9 on Continuous Professional Development and Code of Conduct.

2. Methodology of the Study

The current study employed the convergent-parallel mixed methods research design because it can combine quantitative and qualitative parameters of research which delves better into understanding and inquiring effectiveness of training for professional collaborative practices of the teachers.

2.1 Sample

The sample of elementary school teachers were impaneled by means of implementing simple random sampling technique. The method provided every informant an equal and independent chance of selection. A list of the teachers and head teachers was achieved from the concerned district educational authorities. The sample size of ten percent 586 (male = 296 (51%) & female = 290 (49%)) was thus chosen out of 5860 (male = 2988 (51%) & female = 2872 (49%)) elementary school teachers. Elementary school head teachers fifty eight percent 285 (male = 166 (58%) & female = 119 (42%)) mandated out of 494 (male = 286 (58%) & female = 208 (42%)) resulting from using the simple random sampling technique. Difference in sample size ($ESTs = 586$ & $HT = 285$) was due to the population size in the study.

In the second phase of the study, nine master trainers (male = 07 & female = 02) were selected from the population of master trainers ($n = 45$) for interview purpose through purposive sampling. There were two motives behind the choice of this sample size, firstly, it was deemed satisfactory to come to a point where more interviews would cease to deliver additional understandings. Secondly, they would be manageable for carrying out interviews in the time frame allocated for this purpose.

2.2 Instrumentation

The questionnaires were developed on the basis of the review of related literature and the standard ninth of national professional standard for the teachers. First questionnaire was produced for the elementary school teachers and the second for the elementary head teachers in simple and easy English. There were three parts in the questionnaire which was developed for the elementary school teachers. Part one of the instrument encompassed demographical characteristics of the elementary teachers such as gender, location, academic and professional qualification, teaching experience and training received. Part two of the questionnaire consisted of items about collaboration with colleagues. The similar questionnaire with mediocre modification was also developed for elementary head teachers. Both the questionnaires adopted five point Likert scales such as (i) strongly agree (ii) agree (iii) undecided (iv) disagree and (v) strongly disagree. The validity and the reliability of the questionnaires were determined through the pilot study. The pilot testing of the questionnaires provided feedback about the clarity and appropriateness of each item in terms of its focus, use of language, styles of questions, relevance and internal coherence was sought (Zwozdiak-Myers, 2009). They were pilot tested on twenty five teachers and fifteen head teachers. They were not the part of the sample selected for gathering data. In the light of their feedback, the questionnaires were refined and final versions were launched for the data collection.

In qualitative phase of study, another research technique's the interview protocol was designed for probing the facts about teachers' professional development in collaborative practices from the master trainers. Keeping in view the objective and research question, open-ended and probing questions were designed in the interview protocol for greater clarity and depth of professional collaborative practices. The pilot study involved conducting an interview with a master trainer from the population, who was not part of the selected sample for interview purpose. The feedback was received in relation to situation, the relevance and clarity of open-ended and probing questions interrogated, use of language and sequence order of questions. In the light of this feedback, some modifications were made in the interviews. This procedure was adopted in order to maintain fitness of purpose and minimize the risk of researcher's partiality (Zwozdiak-Myers, 2009). The final versions of both the research techniques (questionnaires & interviews) were launched for gathering the data.

2.3 The Data Collection

The researcher collected data personally by visiting different cluster centers where the informants gathered to fill up the

questionnaires. Some schools from selected sample were also approached by the researcher for data collection. The data were collected through questionnaires and interview techniques from the teachers, head teachers and master trainers respectively. The researcher embodied the interviews at different locations which were appropriated for trainers. The interviews were audio-taped.

2.4 Research Ethics

The ethics are basic factors of developing a theory. A researcher's investigation depends on participants who take part in inquiry and provide valuable services. Therefore, the researcher deemed benefits and safeguarded contributor (Tyler et al, 2006). The researcher assumed the respondents to protect them from any departmental infraction. Also, the researcher took consent of participants and assumed their anonymity. Both the questionnaire had been filled anonymously without teachers and head teachers' identity and school representing their identification. The confidentiality thus formed the essence in the process of data collection.

2.5 The Data Analysis

The data analysis is the most vital and thoughtful part of the investigation because it is a process of arranging, calculating and presenting the information to draw conclusions for certain situation or problem. The chi-square inferential statistics were calculated for the inferences. Chi-square test is employed when the data are in categorical form (Fraenkel & Wallen, 2006). The collected data were categorized such as in rows strongly disagree (1) to strongly agree (5) and in columns teachers and head teachers. Therefore, chi-square was most suitable statistical analysis test for the current research.

The interview data were transcribed into text and then analyzed through qualitative data analysis technique. Both forms of data were mixed to draw inferences of the investigation.

3. The Results

Table 1: The Teachers Work Together with their Colleagues at the School

Statement	Status	SDA	DA	A	SA	Mean	χ^2	Sig.
Teachers work together with their colleagues.	ESTs	23.9	43.7	20.5	11.9	3.12	53.699	.00*
	HTs	11.2	31.9	40.7	16.1	2.54		

* $p < .05$.

Table 1 disclosed that the Pearson Chi-Square test was conducted to analyze the responses of teachers and head teachers related to the teachers work together with their colleagues at the school. The calculated analysis presented as ($\chi^2 (3) = 53.699, N = 871$ (586 EST Teachers + 285 Head Teachers), $p = .00 < \alpha = .05$). The sig-value was found to be statistically significant at cut off level of significance that teachers worked together with the colleagues at schools. Further, ESTs teachers held relatively more strong opinions persons (Mean = 3.12) compared to head teachers (Mean = 2.54) and that they collaborated with colleagues at school setting. The premise of the statement manifested that the mainstream teachers valued the professional collaboration of working together with their colleague.

Table 2: The Teachers Cooperation with other Schools

Statement	Status	SDA	DA	A	Mean	χ^2	Sig.
Teachers cooperate with other schools.	ESTs	67.4	22.5	10.1	1.52	.438	.80
	HTs	67.7	21.1	11.2	1.54		

Table 2 explained that the Pearson Chi-Square test was carried out to investigate responses of teachers and head teachers about teachers cooperate with other schools. The calculated analysis presented as ($\chi^2 (2) = .438, N = 871$ (586 EST Teachers + 285 Head Teachers), $p\text{-value} = .80 > \alpha = .05$). The Sig-value was not found to be statistically significant at cut off level of significance. It means the teachers did not work together at other schools. Moreover, the head teachers held relatively more strong opinions persons (Mean = 1.54) compared to ESTs teachers (Mean = 1.52) and that the teachers did not collaborate with the teaching colleagues when they found the opportunity at other schools. The premise of the statement manifested that the mainstream teachers did not professionally work together with other teaching

colleagues at other schools to enhance the classroom practice of teaching.

Table 3: Teachers Work Together at other Locations except Schools

Statement	Status	SDA	DA	A	Mean	χ^2	Sig.
Teachers work together at other schools.	ESTs	65.2	21.5	13.3	1.61	4.629	.09
	HTs	70.2	21.4	8.4	1.46		

Table 3 described that the Chi-Square test was conducted to probe the responses of the teachers and the head teachers about the teachers work together with colleagues at other places except schools to upsurge practice of teaching. The statistical analysis disclosed ($\chi^2 (2) = 4.629, N = 871$ (586 EST Teachers + 285 Head Teachers), $p\text{-value} = .09 > \alpha = .05$). It means that the sig-value is not found statistically significant. The statistical analysis ascertained that the teachers did not work together with colleagues at other places except schools to enrich professional practice in the classroom setting. Furthermore, the ESTs teachers held relatively more strong opinions (Mean = 1.61) as compared to the head teachers (Mean = 1.46) that they did not work together with other school colleagues except their own schools. The premise of the statement manifested that the mainstream teachers did not work together with colleagues at other places except schools for the professional collaboration.

Table 4: The Teachers Work together with other Professionals

Statement	Status	SDA	DA	A	Mean	χ^2	Sig.
Teachers work together with other professionals.	ESTs	69.3	23.7	7.0	1.52	.278	.87
	HTs	69.8	22.5	7.7	1.54		

Table 4 exhibited that the Chi-Square test was executed to explore teachers and head teachers' responses about the teachers work together with other professionals to boost up teaching in the classroom setting. The statistical analysis showed ($\chi^2 (2) = .278, N = 871$ (586 EST Teachers + 285 Head Teachers), $p\text{-value} = .87 > \alpha = .05$). It means that the sig-value was not found statistically significant. The statistical analysis established that the teachers did not work together with professionals of other disciplines for improving the classroom practice. Furthermore, the head teachers held relatively more strong opinions (Mean = 1.54) as compare to ESTs teachers (Mean = 1.52) and that the teachers did not work together with professionals of other disciplines. The premise of the statement manifested that the mainstream teachers failed to collaborate with the professionals of other disciplines for the development of instruction and pedagogy.

Table 5: The Teachers' Mentoring Program

Statement	Status	SDA	DA	A	SA	Mean	χ^2	Sig.
Teachers work together with their mentors.	ESTs	63.1	20.8	10.1	6.0	1.74	3.535	.31
	HTs	61.8	19.6	14.0	4.6	1.80		

Table 5 unveiled that the Chi-Square test was run to find out the teachers and the head teachers' responses about the teachers' activities to collaborate with mentors to enhance professional teaching in the classroom setting. The statistical analysis showed as ($\chi^2 (3) = 3.53, N = 871$ (586 EST Teachers + 285 Head Teachers), $p\text{-value} = .31 > \alpha = .05$). It means that the sig-value was not statistically significant. The statistical analysis constituted that the teachers did not work together with mentors of inter-discipline professionally for improving the classroom practice. Moreover, the head teachers held relatively more strong opinions (Mean = 1.80) as compare to the ESTs teachers (Mean = 1.74) and that the teachers did not cooperate with mentors. The premise of the statement manifested that the mainstream teachers held pay less value to collaborate with their mentors.

3.1 Research Findings

Table 1 presented the analysis as ($\chi^2 (3) = 53.699, N = 871$ (586 EST Teachers + 285 Head Teachers), $p = .00 < \alpha = .05$). The Sig-value was found to be statistically significant at cut off level of significance. It is deduced that the teachers work together with teaching colleagues at schools [Quantitative Analysis (QL. ANAL.)].

Approximately every master trainer explained and emphasized the importance of collaborative work. For instance

one of the master-trainer illustrated that,

Whenever we were at school, we should be cooperative teachers. We should think that we are the members of the school's family. We should work according to the needs of the students. The main concern was the students and their achievements. Therefore, when we thought and when we needed them to understand that we are not so much important as the importance should be given to the students. Therefore, collaborative efforts were very potentials. As much as teachers were close to each other, the learning of the students would be improved in the classroom setting [Master Trainer (MT) 2].

So, it is construed that the teachers held the disposition to work together at school [Qualitative analysis (QL. ANAL.)] Consequently, it is concluded from the above analysis that the elementary school teachers had disposition to collaborate with other teaching colleagues at the school.

Table 2 explained that the calculated analysis as ($\chi^2 (2) = .438$, $N = 871$ (586 EST Teachers + 285 Head Teachers), $p\text{-value} = .80 > \alpha = .05$). The Sig-value was not found to be statistically significant at cut off level of significance. It articulates that the teachers do not have the disposition of working together at other schools (QU. ANAL.) The importance of collaborative work was mentioned by one the master trainer as:

Unfortunately, teachers consider that the teaching is a relaxing profession in which teachers are stress free. They only sit in the chair and assign students to memorize and write the rote content. This is a traditional approach which causes many snags in the teaching and learning process. However, I tried my best to shift this thinking toward engaging the teachers in a number of activities which are very helpful for their effective job in the classroom during the training sessions (MT9). (QL. ANAL.)

Hence, the teachers showed disagreement of working together with teaching colleagues of other school. So the analysis depicts that the elementary school teachers disregarded with collaborative learning for solving their pedagogical problems.

Table 3 unveiled that the Chi-Square test was piloted to probe teachers and head teachers' responses about teachers work together with colleagues at other places except schools to improve practice of teaching. The statistical analysis discloses ($\chi^2 (2) = 4.629$, $N = 871$ (586 EST Teachers + 285 Head Teachers), $p\text{-value} = .09 > \alpha = .05$). The numerical analysis determines that the teachers did not work together with the colleagues at other places except their own schools (QU. ANAL.)

The disposition of collaboration among the teachers is the major approach of the professional development programs and it was clearly mentioned by some master trainer as:

*I made groups during training sessions. All types of teachers were the member of the groups. Through this activity, we transformed values to the teachers unconsciously about learning the collaboration activity (MT1).
Whenever we were at school, we should be cooperative to each other. We should think that we were the member of the school's family. Therefore, the collaborative efforts were very potentials. As much as teachers were close to each other, the learning of the students could be improved in the classroom setting (MT2).*

Thus, the master- trainers provided the value of collaboration among the teachers. However, the trainers did not transform the value of working at other places except schools. (QL. ANAL.). So, it is concluded that the elementary school teachers did not work together with colleagues at other places except their own schools.

Table 4 displayed that the Chi-Square test was managed to test teachers and head teachers' responses about the teachers work together with other professionals to boost up teaching in the classroom setting. The statistical analysis revealed ($\chi^2 (2) = .278$, $N = 871$ (586 EST Teachers + 285 Head Teachers), $p\text{-value} = .87 > \alpha = .05$). The statistical analysis illustrates that the teachers did not work together with the professional of other disciplines for improving the classroom practices. (QU. ANAL.)

*The master trainers favored the interactive learning and collaboration among the colleagues and described it as:
I think that peer and interactive learning is very important. Sometimes, we see it as reflective learning or reflective teaching also. Normally we ask them to reflect their teaching experiences to other teachers (M1).*

The qualitative analysis highlights this aspect that the trainers provided the value of collaboration for the teachers. However, the trainers did not transform the values of working in intra-disciplinary context and intra-professional experts. (QL. ANAL.). Finally, it is perceived that the elementary school teachers did not consider the value of working in intra-disciplinary context and intra-professional experts for their professional improvement.

Table 5 exposed that the Chi-Square test was employed to find out teachers and head teachers' responses about the teachers' activities to collaborate with the mentors to enhance the professional skill of teaching in the classroom setting. The statistical analysis presented ($\chi^2(3) = 3.53, N = 871$ (586 EST Teachers + 285 Head Teachers), $p\text{-value} = .31 > \alpha = .05$). The statistical analysis endorses that teachers did not give the value to collaborate with mentors inter-disciplinary/professional experts for improving the classroom practice. (QU. ANAL.)

Most of the master trainers favored mentoring programs and they described it as:

I think that peer learning was very imperative for the improving of teaching especially when one teacher was mentor having higher experience and some novice teacher having less experience was mentee, then peer learning was very effective (M7).

The mentoring was discussed in details by another female master trainer as:

I tried my best to introduce new concepts of refining their skills by adopting the mentoring process. The modern concept of teaching is mentoring, in which more experienced and more qualified colleagues could share their experiences with less experience in a friendly environment. Through the program of mentoring they discussed their educational problems and the classroom experiences with each other within the premises of school, staffroom, library and classroom, etc. (MT4).

But they always hesitated to do this kind of activities. However, they believed in evaluating themselves in a good way and try to improve their own teaching skills (MT2). So, the trainers provide the value of collaborating with experienced and veteran teachers. (QL. ANAL.)

Thus, it is discovered that the elementary school teachers did not have the value of working with mentors. However, the teachers felt hesitant to the idea of working under the supervision of experienced teachers.

4. Discussion

The collaboration with the colleagues is the professional learning activity that not only enhances substantial improvement in the students' learning outcomes but also diminishes the isolation in the classroom environment and carries the career rewards and daily satisfaction. Through formal and informal in-service training patterns, the teachers support each other and share the available pool of ideas, methods and leading material. In the academic and schooling context at the district level, some collaborative activities such as group dynamics, cooperative learning, mentoring and discussion were focused by the trainers in the training programs of teachers' development. However, there was no ICTs based collaboration activity which was specially focused area in the modern trends of professional development of the teachers. There is need to systemize the collaboration process at elementary level of education keeping in view the ICTs integration with professional development. Especially, the mobile technology should be adopted for the collaboration with the colleagues because it is the quick, the cheap and the strong electronic source. The internet facility is also available to observe and seek out the suitable teaching and learning resources i.e. articles, e-learning, web-sites, e-library, and videos, etc. to accelerate the pedagogical progress in the classroom setting. Furthermore, there is a need of scheduling the regular collaboration process at schools. In this respect, the hierarchy of educational administration should support the activities of collaboration in the schools.

Collaborating with other teaching colleagues forms significant value of professional development for the teachers. It is a value of sharing knowledge, teaching skills, pedagogical methods and new techniques of assessment and solving problems with the help of experts, mentors, veteran teachers, educationists and professional of inter-discipline/profession and intra-discipline/professional at schools and other places rather than only in a school. The conclusion of the study displayed that the disposition of collaborating with other teaching colleagues was not developed through in-service training for the professional development of teachers. Collaboration with other teaching colleagues is not fully developed in the public sector schools. There are number of problems and limitations regarding collaborative work such as no formal training, time and working conditions exist (Forte & Flores, 2014). There is also a misbelief among teachers that interacting with colleagues does not foster learning and it yields limited accomplishment in teachers' development (Tam, 2014). Another constraint of collaborating with other among teachers is that their daily routine confines them to their school sites (Gatt & Costa, 2009). Therefore, for the proper adaptation of collaborative activities with teachers and professional in the schools and other locations, it must be well designed, communicated and learned.

5. Conclusions

On the basis of the research findings, it was concluded that the teachers had inhibited dispositions to collaborate with other teaching colleagues at schools. They did not value to collaborate with other teaching colleagues of other schools. They did not work together with colleagues at other places except own schools. They did not value of working with the experts and they did not value of working under the supervision of experienced teachers. Therefore, it was concluded that the in-service training was ineffective for developing values of collaborating with other teaching colleagues for the improvement of the practices.

6. Recommendations

1. Effective collaborative practices should be designed for the teachers to foster the culture of sharing knowledge and solving problems of teaching with the help of other colleagues. In this respect, some fundamental barriers that hinder collaboration among teachers should be removed particularly policy maker and administration of schools must initiate and schedule collaborative practices. The cluster schools and training units (district based training centers) have to take suitable initiatives.
2. Additionally, there should be more research into how mobile phones can help teachers' connect/ collaborate with each other and how they can share their best practices.

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