

A Study to Investigate the Reflective Activities of In-Service Teachers for Professional Development in Pakistan: A Mixed Methods Approach

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ABSTRACT

This study investigates the reflective activities undertaken by teachers for their professional development using a mixed methods inquiry and convergent parallel research design. 586 teachers and 285 head teachers participated in the study by means of a questionnaire and 9 master trainers were interviewed to provide context for the questionnaire responses. The transcripts of the interviews were transcribed into codes and categories, and these results compared with the quantitative measures from the questionnaire. It was concluded that in-service teachers did not utilize reflective activities for their professional development. Therefore, it is recommended that a productive training series may be managed in order to stimulate activities for reflection on teaching.

KEYWORDS: Professional Development, Reflective Practice, Professional Diary, Videotaping, Observed by Peer, Portfolio.

1. INTRODUCTION

Modern pedagogical sciences call for a reflective attitude from teachers in teaching and learning at schools, as postulated by [11] and [40]. Contemplative and rational analyses of the act of teaching with the help of multiple and diverse activities is described as reflection upon teaching; to participate, a teacher gets involved in activities before, during and after teaching to critically identify, analyze and manipulate complex phenomena of practice to foster classroom work and boost students' learning [5, 38]. Under this reflective ideology, a teacher presents his/her entire teaching system for personal assessment, continuous learning and professional development [17, 45]. Myriad characteristics have been associated with this debate; for example, reflection exemplifies inventive roles and develops overall pedagogical customs to improve the proficiency and effectiveness of teachers [4, 13]. Reflection is a framework of improvement in order to augment individual professional development [6, 23]. Additionally, the significant academic imperative which is the purpose of professional development is ultimately to enhance the students' academic achievement [3, 12]. To meet this need, professional teachers need to experience diverse reflective models and resources in schools in order to understand their potential and make the greatest use of this tool. Some significantly robust reflective activities include writing professional diaries and recording videos of teaching presentation [29, 39]. In a similar fashion, observation by peers and developing teaching portfolios are deemed to sustain teachers' ability in the classroom [18, 27, 32, 44]. Incorporation of such reflective activities extends the perception of teaching, as illustrated in Figure 1.

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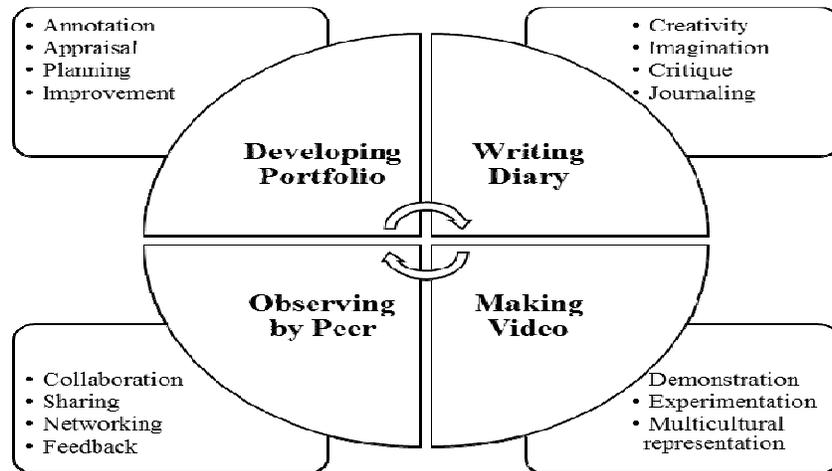


Figure-1: Intensive characteristics development among teacher by reflecting on teaching.

It is illustrated in Figure 1 that the reflective system of teaching presents prominent benchmarks, attributes, roles and paradigms of teachers. This is somewhat increased and advanced model of teaching in comparison to traditional and conventional pedagogy without any standard and formal role of teaching in the contemporary global age. This model particularly depicts working teachers who have not availed themselves of advanced and formal schooling in teaching except in-service training and education. The review of related literature, below, describes its main features in details.

Writing is the most common scheme that is utilized as a reflection. It is a straightforward and flexible way to express criticism of teaching operations. For example, a teacher may adversely assess previous teaching experiences and set up new perspective [26]. Judging and making sense of teaching methods may also be done through a process of reflective writing [16]. Moreover, writing promotes confidence and improves teachers' epistemological and axiological viewpoints of teaching. Many types of writing such as free writing, open-ended writing, independent writing, focused writing, supported writing and creative writing are emphasized to be pertinent to teaching and learning phenomena [47]. Whatever the type of writing, however, writing a professional diary is held to be an extensive frame of reference for assessing and interpreting instructional behaviors and skills.

The professional diary is also recognized as the reflective diary, which means keeping records and reflections of teachers through narrative. A teacher has the liberty to write and elaborate in his or her individual and idiosyncratic way to illustrate his or her feeling, impression and interpretation of teaching activities [34]. Beyond being useful for forming a reflective frame of mind, writing a professional diary was also found to be helpful for collaborating with researchers [37] and specifically examined the professional ability of teaching in classroom [41].

In addition to writing a professional diary, recording videos of pedagogical demonstration are another tool for improving teachers' critical thinking and behavior in classroom because they allow teachers to view teaching presentations by themselves and by experts [9, 35]. In light of both self-feedback and expert-feedback, a teacher's pedagogical attitude is rectified and refined. This reflective attempt allows prompt feedback to be provided about special behavior improvement by focusing on individual characteristics and reviewing real-life teaching scenes; this kind of review may motivate a teacher to take on innovative methods as well as resources in the classroom [14, 15]. In this way, video recording is a valuable course of conduct to refine the art of teaching.

The most convincing activity of reflection is observation by a mentor in order to provide immediate and prompt constructive opinion and feedback [49]. This reflective activity is called peer observation [25]. It has been found that peer observation is valid and convenient reflective act to report upon teaching [28]. The peer observes his or her colleague in the classroom and reports his or her positive and negative aspects of teaching. The mentor also collaborates with the teacher by sharing successful experiences and methods for the improvement of the instruction. Furthermore, this reflective mode is very beneficial to produce confidence in teacher particularly when using the microteaching and team teaching methods of pedagogy.

In addition to the peer observation, portfolio development is also a substantial component of teacher' reflection upon teaching. Portfolio development is the ongoing process of teachers' professional learning, articulation of teaching philosophy, generating new strategies and assessment of competence in written format [48]. By and large, the purpose of portfolio development is to document performance, observe growth, highlight discrepancies in development, and augment self-responsibility [42]. The professional portfolio is the collection of a teacher's

artifacts including models of teaching tasks and projects, academic journal articles, records of pupils' accomplishment and progress, professional credentials, professional standards and reflection upon teaching. It is extensively useful as a reflection to judge the professional learning of teachers in order to innovate teaching [30, 24]. For this reason, portfolio development is a reflective activity which provides a vivid picture of critical moments in classroom pedagogy.

In the context of Pakistan's educational scenario, it has been documented that the teaching profession has demonstrated poor performance especially in public sector. All stakeholders have the unanimous opinion that the quality of public teachers is unsatisfactory in Pakistan [31]. The teachers have poor performance in subject competencies [46]. The dismal performance of teachers in the education system is attributed to inadequate in-service teacher training projects [20]. These arguments make a strong case for improving the competencies regarding the practice of instruction; teachers need higher standards in their training, especially as they reflect upon teaching practice to improve their teaching skills.

Looking at an international view of teacher development, it can be observed that the countries which have established wide-ranging policies to enhance the quality of their teachers by engaging them in in-service training programs have improved their performance in the Program of International Students Assessment, PISA 2012 [33]. To align with these international standards, it has been proposed that all teachers in Pakistan have opportunities for professional development through a program organized on a three-year cyclic basis. The progress in career shall be linked to the participation of such professional development projects [20]. In order to accomplish the status of professional teaching, teachers need to update their knowledge, skills and values regarding their professional practice, which will contribute to positive changes in the academic environment in their classroom [46].

Professional development plays a crucial role in promoting teaching quality, instructional strategies and professionalism among teachers. Teachers are urged to adopt research-based practices and use standardized methods of teaching; they enhance their capabilities in these areas by participating in professional development training programs. In order to achieve the expected outcomes of in-service training, its effectiveness needs to be measured in terms of professional development for building up teachers' proficiency in these areas. To understand the significance of reflective undertakings as part of professional development, it is indispensable to carry out an intensive inquiry in the field of professional development of teachers. The National Professional Standards for Teachers emphasize these diverse activities for the teachers' development in their document [19]. Based on the standards of this professional teaching approach, the study has attempted to explore the effectiveness of in-service training of elementary school teachers to reflect on teaching for professional development. To address the objective, the research question for this study was formulated as follows:

"In which activities do the teachers engage themselves to reflect on teaching in order to develop their professional practices in classroom setting?"

The study was performed with elementary school teachers in three districts [Lahore, Rawalpindi and Nankana Sahib] of the Punjab. The reasons for selecting these areas were that Lahore represented the central Punjab, Rawalpindi characterized the upper Punjab and Nankana Sahib epitomized the developing district; by sampling these three different districts, a broad perspective of teaching practices in Pakistan could be gained. This study also encompassed the training periods carried out during 2009-2012 by the Directorate of Staff Development (DSD) to elevate teachers' professional knowledge, skill and behavior.

2. METHODS AND PROCEDURES

2.1 Research Design

This study needed to contain both numeral [e.g. something that is quantitative] and narrative [e.g. something that is qualitative] approaches because no one approach is suitable for this study. While it is important to understand the number of hours spent in different types of professional development environments, the teachers' impressions and perspective gained through discussions of their experience help to contextualize the quantitative information. In this respect, the mixed methods research (MMR) was considered appropriate to evaluate the phenomenon and the convergent parallel mixed methods research design [8, 10] was implemented. The convergent parallel research design integrates quantitative-qualitative data and thereupon draws inferences. Quantitative-qualitative data support or cross the theme of this inquiry. Reflective activities such as writing professional diaries, videotaping classroom practice, peer observation and portfolio development were used to align the numerical and narration data and deduce the conclusions.

2.2 Sampling

The mixed method research design required two phases of sampling for data collection. In first phase, to obtain the quantitative data, a survey was sent to a sample of 586 teachers out of the 5860 elementary school teachers (ESTs) at

the three districts included in the study. The survey is described in the following section. A list of the teachers and head teachers was acquired from the concerned district educational authorities and departments. Teachers were selected to participate via random sampling, then contacted by letters and phone calls with a request to participate in the study.

The demographic data reflected the teachers' gender, area, academic and professional qualifications, as well as their teaching experience and training. Similarly, the head teachers' demographic data described the same categories except the training, because their training sessions were not necessary in the data analysis. An almost equal number of male [50.50%] and female [49.50%] elementary school teachers were included in the study, while the sample of head teachers of the middle school contained 58.2% male [n=166] and 41.8% female [n=119] participants. The difference existed due to the process of upgrading of schools from primary to middle schools in these districts at the time of data collection. At some places, the female primary schools' head teachers were also performing the duty as the head teacher of the middle schools. Therefore, there is a lower number of female head teachers rather than male head teachers.

Regarding educational level, most of the teachers of elementary school hold either Master [57.0%] or Bachelor degrees [36.7%], fulfilling the basic criteria of academic qualifications. However, some teachers [6.31%] passed their Intermediate (FA) which they had the lowest qualifications as primary school teachers. Regarding professional qualifications, the data displayed that the teachers possessed M. Ed [46.2 %] and B. Ed degrees [44.0 %]. Some teachers [9.7%] had Certificate in Teaching (CT) program to perform their jobs requirements in the middle schools. Under the current policy of Government of Punjab, all teachers in the elementary schools must hold B. Ed. Degree as an entry qualification. It is inferred from the trend of data that mostly the teachers have the professional qualification above the Government's job criteria. It is a very positive trend that teachers had above the required level of academic and professional qualifications. In addition, the majority of the teachers [79.9 %] had one to ten years of teaching experience. The trend illustrated that the majority of the teachers were new and fresh entrants as a policy of recruitment to bring in fresh talent in the system. The data regarding in-service training of teachers revealed that 94.2 % [n=552] of teachers had received four to six training courses. Surprisingly, it seemed that teachers had been attending training for their professional development.

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 interviews through purposive sampling from three districts. In these interviews, they were asked to articulate the purpose, content, modules, training activities and teachers' performance reviews that they carried out during the year 2009-2012. The entire cohort of master trainers (MTs) had a high level of training and teaching experience [at least 10 years of experience], academic and professional qualifications [all possessed at least a Master degree]. The majority of the MTs were subject specialists in their concerned subjects. There were two motives behind the choice of this sample size of MTs: firstly, it was deemed satisfactory to come to the point of saturation where more interviews would cease to deliver additional understandings; secondly, there was a limited time frame allocated for these interviews and these nine interviews fit the time frame. In sum, 586 teachers participated in the survey and 9 master trainers participated in the interview process.

2.3 Instrumentation

Two sets of research tools were used: the questionnaire and interview. A set of two questionnaires was designed to elicit direct responses from teachers and head teachers. The questionnaires were developed after a review of related literature and the Standard 9 of National Professional Standard for the Teachers in Pakistan. The questionnaires are included in Appendix A. The first questionnaire was produced in simple English for the elementary school teachers to self-report their reflective activities in the classroom. There were two parts to this questionnaire: part one contained demographical questions such as gender, location, academic and professional qualification, teaching experience and training received; part two consisted of questions about teachers' values and skills regarding reflection on the teaching practice to enhance their classroom practices. A similar questionnaire with small modifications was also developed for elementary head teachers. The survey distributed to head teachers asked them to report on teachers' reflective activities in the classroom after completing training sessions. A five-point Likert scale which ordered response categories was employed for respondents to rate their extent of agreement and disagreement regarding items in the questionnaire.

After formulation and review of the questionnaires, these tools were pilot tested for feedback about the clarity and appropriateness of each item in terms of its focus, use of language, styles of questions, relevance and internal coherence. The questionnaires 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 content validity was further treated and reframed. Finally, reliability of the questionnaires was determined through Cronbach Alpha technique.

The reliability of the teachers and head teachers' questionnaires was .79 and .81 respectively. The final versions were launched for the data collection and can be viewed in Appendix A.

For the qualitative phase of study, the interview protocol was designed for probing the facts about teachers' professional development from the master trainers. Keeping in view the objectives and research questions, open-ended and probing questions were designed in the interview protocol for greater clarity and depth of professional development. A list of questions used in the interview can be found in Appendix B.

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 pilot interview lasted for 35 minutes and was followed by a debrief session. 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. The final versions of both the research techniques [questionnaires & interviews] were launched for gathering the data.

2.4 Collecting & Analyzing the Data

Permission was gained from District Education Officers (DEOs), Heads of District cluster training centers, school heads and the participants' informed consent was taken for collecting the data. Furthermore, the anonymity and confidentiality of the participants were ensured. Data were collected from the participations by means of questionnaires distributed to teachers as well as head teachers and with the help of interviews conducted with master trainers. The quantitative data were examined with the assistance of employing percentage, mean and chi-square statistical procedures; more detail on these analyses appears below. Interview data were transcribed into text and then analyzed with the help of qualitative data analysis guidelines. The deductive approach [top-down] was adopted to confirm the research question regarding the reflective practices that improve the classroom teaching. In this approach, the set of themes are created before the analysis. The codes were developed by hand mechanical system of coding. The open codes such as professional diary, videotaping, peer observation and portfolio were emerged and further reflective activities were categorized. The breakdown of concept, category and code are being presented in Table 1.

Table 1: Breakup of Concept, Category and Code

Concept	Category	Code
Professional Development	Reflective Activities	<ul style="list-style-type: none"> • Professionals Diary • Videotaping • Observed by Peer • Portfolio

3. RESULTS

The elementary school teachers (ESTs) and head teachers (HTs) were asked in the survey about teachers' reflective activities such as writing professional diary, recording videos, observing by peer and developing portfolio. Furthermore, the master trainers (MTs) were also interviewed about such reflective activities. Responses to question 1 in the survey whether teachers used the technique of writing diary to reflect on teaching were analyzed using chi-square method to produce the results in Table 2.

Table 2: Teachers Write Professional Diary

Statement	Status	SDA	DA	A	SA	Mean	χ^2	Sig.
Teachers write professional diary.	ESTs	29.5	44.7	24.7	1.1	2.23	24.641	.00*
	HTs	35.4	53.3	10.5	0.7	1.87		

* $p > .05$

The statistical computation in Table 2 exhibited as $[\chi^2 (3) = 24.641, N = 871 [586 \text{ EST Teachers} + 285 \text{ Head Teachers}], p\text{-value} = .00 < \alpha = .05]$. These results show that the sig-value was statistically significant. It meant that teachers wrote their own professional diary to reflect on their teaching. Additionally, ESTs teachers held somewhat more strong views [Mean = 2.23] compared to head teachers [Mean = 1.87] that they wrote their own professional diary to reflect on their teaching.

Moreover, some master trainers explicitly mentioned professional diaries in their interviews:

...teachers were engaged in writing professional diaries [Master Trainer: MT7].
 I asked teachers to self-evaluate their own teaching to write honestly the critique on their own teaching process [MT1].
 Sometimes, they were engaged in activities such as to write and discuss their teaching drawbacks. But they felt hesitation to participate in activities especially in writing their teaching shortcomings [MT4 & MT5].

From the interviews, it was clear that master trainers attempted to train the trainees to write professional diary to reflect upon their teaching.

Master trainers told us that they suggested that the teachers use diaries as a means of professional reflection, and this message appeared to be taken seriously because the significant value displayed that teachers adopted this technique. The second technique analyzed was video recording of teaching sessions. In the questionnaire, teachers were asked about recording the video of their teaching presentation in the classroom. The performed analysis is presented in Table 3.

Table 3: Teachers Videotape their Teaching

Statement	Status	SDA	DA	A	Mean	χ^2	Sig.
Teachers videotape their teaching.	ESTs	65.2	34.6	0.2	1.35	3.191	.20
	HTs	70.9	29.1	0.00	1.29		

In the computational analysis, presented in table 3, displayed as [$\chi^2 (2) = 3.191, N = 871$ [586 EST Teachers + 285 Head Teachers], $p\text{-value} = .20 > \alpha = .05$]. The sig-value was not statistically significant and they themselves did not videotape their classroom instructions. Additionally, ESTs teachers exhibited moderately more strong attitudes [Mean = 1.35] compared to head teachers [Mean = 1.29] that teachers themselves did not videotape their classroom instructional scenes.

During the interviews, it was evident that most of the master trainers felt that teachers were reluctant about recording their teaching practices, which may explain why so few teachers actually engaged in this practice. One Master Trainer, MT2, described this explicitly:

... engaging teachers in such activities could be very helpful in improving their teaching. But actually, during training projects, they felt shy and reluctant to demonstrate on the stage and board. They always hesitated to do such kind of activities [MT2].

Gathering the quantitative and qualitative parameters, it was found out that teachers did not videotape their practice of teaching in the classroom because master trainers added that they had not overcome their reluctance to video record themselves and did not see the pedagogical value in this activity.

Beyond recording themselves, observation by peers was the next type of reflective professional development analyzed. In the questionnaire, we asked, "Teacher were observed by their peers."

Table 4: Teachers Were Observed by their Peers

Statement	Status	SDA	DA	A	SA	Mean	χ^2	Sig.
Teachers observed by their peers.	ESTs	63.0	18.4	16.9	1.7	1.75	7.805	.05*
	HTs	64.6	22.1	13.3	0.00	1.62		

* $p > .05$

The statistical analysis in table 4 illustrated as [$\chi^2 (3) = 7.805, N = 871$ [586 EST Teachers + 285 Head Teachers], $p\text{-value} = .05 > \alpha = .05$]. It intended that the sig-value was statistically significant, meaning that a significant amount of the population was being observed by their peers. Moreover, teachers held comparatively more strong opinions [Mean = 1.75] compared to head teachers [Mean = 1.62] that they were being observed by their peers.

In the interviews, master trainers described the effectiveness of their sessions on peer observation with teachers. Some of their remarks are as follows:

... Teachers were engaged in valuable analysis of demonstration to reflect on their teaching [MT7].
 I emphasized teachers evaluate each other teaching by observing teaching analytically. Specially, teachers were asked to observe critically their colleagues teaching and suggest some recommendations how they would make their presentation, classroom arrangement and teaching methodology better [MT1].

The effectiveness of these presentations on peer observation made a significant difference in the use of observations as a professional development practice.

Finally, the role of the teaching portfolio in professional development was analyzed. In the questionnaire, teachers were asked, "Teachers develop their professional teaching portfolios." The results are detailed in Table 5.

Table 5: Teachers Develop their Professional Teaching Portfolios

Statement	Status	SDA	DA	A	Mean	χ^2	Sig.
Teachers develop their professional portfolio.	ESTs	73.9	24.4	1.7	1.29	5.101	.07
	HTs	76.5	23.5	0.00	1.23		

Table 5 presented the statistical analysis as $[\chi^2 (2) = 5.101, N = 871 [586 \text{ EST Teachers} + 285 \text{ Head Teachers}], p\text{-value} = .07 > \alpha = .05]$. The sig-value was not statistically significant, meaning that a significant amount of teachers did not develop their teaching portfolio to analyze their practice critically for improvement. Both the teachers [Mean = 1.29] and head teachers [Mean = 1.23] also had the views that teachers themselves did not develop their professional teaching portfolio to address the analytical views of their practice of teaching.

In the interviews, master trainers also remarked on this lack of use of portfolios:

Teachers did not manage their portfolios up to the mark [MT3].

Portfolio was the kind of documentation in which they critically analyzed training in which trainees described the day to day assignment, pedagogical skills, and content of specific subjects, presentations, assessment, scripts and modules. I emphasized on the development of professional portfolios and teachers' prepared colorful and eye-catching portfolios in which they analyzed their teaching critically. They did not complete their assignments with their own wish and they always tried to avoid this kind of projects and portfolios [MT9].

Even though the master trainers emphasized the portfolio as a valuable tool for reflecting upon teaching, there was a disconnect between their training and the actual practice of the teachers. Perhaps teachers are too busy to make portfolios, or they were not required to make one for hiring or promotion and therefore saw little use to them.

4. CONCLUSIONS AND DISCUSSIONS

Teachers are expected to learn techniques throughout their career to improve their teaching practice. High quality, ongoing professional learning and development programs are the method by which powerful reflective tools are introduced and utilized to increase effectiveness in the classroom. This study highlighted this pressing issue of whether teachers actually use these reflective activities to improve professional learning and development. A self-report questionnaire was administered to the in-service elementary school teachers; furthermore, another questionnaire was given to head teachers to elicit information about teachers' practices at the classroom and school level. Finally, master trainers were interviewed about learning and development of reflective activities during the training sessions that they led. On the basis of the data analysis, it was concluded that teachers wrote professional diaries and they observed each other practice for rational analysis of teaching; however, they neither made videos nor prepared portfolios. Especially regarding the videos and portfolios, it is evident that the training programs could not effectively provide theoretical as well as practical aspects of reflection. Teachers were reluctant to use these methods and did not adequately see the value in such practices to improve their teaching – at least, they did not see enough value to overcome their own personal reluctance to engage in these activities.

In the context of Pakistan, teachers at the elementary level do not undertake the extent of professional development required by their employers and the government, which may hamper their performance and their engagement with innovative and creative pedagogy. They do not have positive motivation towards learning the profession continuously as mentioned by master trainer in the above qualitative analysis. The study established that the training sessions from 2009-2012 for teachers' professional development did not prove to be effective in order to implement reflective activities and practices. Without continuous professional development and critical reflective skills as mentioned in Figure 1, teachers may not have the aptitude to take over the advanced modus operandi of the teaching and learning process.

One of the types of reflection that the teachers did engage in was writing a professional diary. The study was favored by [1] and [43], who suggest that writing is an effective reflective affair that can escalate the professional development of teachers. Furthermore, those writing must be shared with other teachers so that the community may learn from each other as they work to improve their teaching. To create such a context for successful collaboration, journals could be managed by a professional organization that enables the sharing and reflecting process as mentioned in Figure 1.

Another positive outcome of this study was that teachers did engage in observing other teachers as a reflective activity. The finding of the study was also coincided with [22] and [2] that teachers' professional ability and learning can be sustained by means of observing each other practice. However, to be most effective, a systematic and structured program needs to be enunciated for this purpose and factors that facilitate the peer observation. For

example, this reflective initiative may also benefit from a mentoring program in which novice teachers are paired with veteran teachers and they observe each other's teaching and give constructive feedback.

The study found that teachers neither used video recordings nor portfolios to reflect upon their teaching; yet these methods have been found to be effective to interpret teaching logically, critically and rationally [21, 36]. On that account, it was observed that teachers remained unsuccessful in managing issues regarding classroom pedagogy. They also did not pinpoint their deficiencies for professional development. By avoiding these techniques, teachers restrict themselves from development along the lines of multicultural representation, smart educator, researcher, practitioner for global pedagogy and professionalism - roles portrayed in Figure 1. It is hypothesized that teachers do not engage in these activities because they do not see the benefits of doing so. For developing these capacities in teachers, making video and portfolio development should be a fundamental part of the teachers' accountability and appraisal system in schools. By incorporating these techniques into the accountability system, teachers will benefit from the skills developed as they engage in these activities and the schools will benefit from teachers who are able to engage in the roles outlined above.

5. RECOMMENDATIONS

This study came to the conclusion that while teachers were engaging in some reflective practices, they engaged in an insufficient variety of reflective activities to appraise and criticize their professional practice as well as performance. For this reason, it is recommended that some state of the art, operative and conducive reflective skills may be made known in the training schedules. Particularly, video recording and portfolio development should be incorporated more extensively to evaluate and accelerate the practice. This kind of engagement is necessary in order to realize the "connecting classroom initiative" in which schools collaborate with their counterparts in developed countries. Accordingly, microteaching packages and parallel modernizations may be a vital part of teachers training; engagement with video recording and portfolio creation will be an essential, fundamental skill to build upon to realize these initiatives. With these particular activities identified as a deficiency in Pakistan's education professionals, further research may be conducted to identify the particular barriers that hinder these effective and reflective activities among teachers and the strategies that are most effective in overcoming them.

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