

EFFECT OF REFLECTIVE TEACHING TRAINING AND TEACHING APTITUDE ON TEACHING SKILLS AMONG ELEMENTARY TEACHER TRAINEES

By

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ABSTRACT

Teachers serve education, which is an effective instrument of man making. The teachers learn this art through Preservice teacher education programme. Teaching has been a reflective process from the beginning. Reflection is used in all sectors of teacher education, including Vocational and Adult education, for a number of years. Despite numerous articles, there is a little solid empirical evidence that supports the view that it results in superior teaching practices among Elementary teacher trainees. This Research study focuses on the orientation of various processes of capturing Reflection. It also considers the development of Teaching Skills of pre-service teachers' throughout their practicum. In relation to these, it analyzes the effect of Teaching Aptitude in developing Teaching Skills among Elementary Teacher Trainees.

The samples for this experimental research study were Elementary Teacher Trainees selected randomly from Teacher-Training Institutions of Uttara Kannada district, Karnataka, India and were grouped into High and Low Teaching Aptitude groups by administering the standardized Teaching Aptitude Test. 2x2 factorial design was used as an experimental design. Data collection consisted of measuring Teaching Skills by observing lessons and rating the Teaching Skills during the Practicum. The findings of the present study revealed that reflective teaching strategy has significant effect in developing teaching skills. There is no significant effect of teaching aptitude in developing teaching skills as the interaction of reflective teaching strategy and teaching aptitude also has no significant effect on teaching skills. The study suggests that the elementary teacher-trainees perceived the knowledge of reflective teaching after training. This knowledge on reflective process increased their self-awareness towards their teaching skills, which enhanced their professional identity development as teachers. They focused primarily on the instructional processes, motivation, and on classroom management while reflecting on their experiences, while having emphasis on effective teaching so that desired objectives are achieved.

Keywords: Reflective Teaching Training, Teaching Aptitude, Teaching Skills.

INTRODUCTION

Teacher Education programme play a vital role in the total Education system. The quality of training the trainees gets reflected in their competence later. It is necessary to provide good training at the Teacher Training Institutions, since the teacher is a nation builder. The aim of the Teacher Education is to shape and strengthen the basic teaching techniques and provide feedback (Han, 1995).

The National Curriculum Framework, (2005) places demands and expectations on the teacher, which need to be addressed by both initial and continuing Teacher

Education. As a profession, it requires people who have the right type of aptitude and attitude for teaching in bound to be a successful teacher in future. Effective teachers are reflective; they constantly review their practice, discuss it with their colleagues, consider their learners' responses and seek to develop new and better ways of teaching (Sally Faraday, Carole Overton, Sarah Cooper, 2011).

Reflection is considered to be an important means to link theory and practice for it helps teachers become teacher investigators through critical reflection about their

teaching behaviors. The strength of teacher investigator is the development of a better understanding of classroom practice in ways that are specific and local. What experts lack is a teacher's insider perspective on the classroom context and the research findings they generalized are to the larger educational community. To become a teacher investigator means that the teacher can thoughtfully examine and analyze classroom practices through intentional and systematic inquiry into teaching (Darling-Hammond, L, 2000; John Smyth, 1993).

Studies on Reflective Teaching revealed that, Reflective practice can be a beneficial process in teacher professional development, both for Pre-service and In-service teachers.

In the present experimental study, an attempt is made to study the effect of Reflective Teaching Training, Teaching Aptitude and their interaction in development of Teaching Skills among Elementary Teacher-Trainees. The Investigator developed a Reflective Teaching Training Instructional Package to train the Teacher-Trainees.

Conceptions of Reflective Teaching in Teacher Education

Reflective Teaching has been a major movement since the eighties in teacher education (Cruickshank & Applegate, 1981). Chandler et al (1990) also reported that reflection was not found to be enhanced by training. Wallace (1991) contends that "ways should be found of making the relationship (between received knowledge and experiential learning) reciprocal, not one-way, so that the trainee can reflect on the received knowledge in the light of classroom experience, and so that classroom experience can feed back into the received knowledge sessions" (p.55). Wallace proposes a reflective model of teacher preparation, which emphasizes the link between theory and practice. The need to bridge the gap between theory and practice in teacher preparation has been echoed by Williams (1994). Williams emphasizes the need for learning to be constructivist and personally significant for the student teacher (Telma Gimenez, 1999).

NCTE 2009 states that, Teacher Education programmes at all stages should provide opportunities to the would-be

teachers for understanding the self and others, develop sensibilities, the ability for self-analysis and the capacity to reflect. They should also provide ample opportunities to observe and engage with learners and learn to work collaboratively in groups. There needs to be an adequate curricular space for critical content engagement and the development of professional capacities in pedagogy, observation, drama, craft, story-telling and reflective enquiry. Professional opportunities need to include reflection on their own experiences and assumptions as part of the course and classroom enquiry; critical observation and reflective analysis of the practice of teaching. Availability, quality, appropriateness and sufficiency of feedback are necessary for learning to be reflective practitioners. In brief, the new vision of Teacher Education will be more responsive to changes in the school system as it envisages a significant paradigm shift (Teacher Education in India).

Theoretical Framework

Reflective Teaching

Reflective Teaching is a process where teachers think over their teaching practices, analyzing how something was taught and how the practice might be improved or changed for better learning outcomes. Some points of consideration in the reflection process might be what is currently being done, why it's being done and how well students are learning. Reflective Teaching conceptualises teaching as a complex and highly skilled activity, which, above all, requires classroom teachers to exercise judgment in deciding how to act. High-quality teaching, and thus pupil learning, is dependent on the existence of such professional expertise.

Steps of Teaching Process by Reflective Practitioner

The various steps according to which every Reflective practitioner can participate in the improvement of the whole educational process are:

- *Planning Teaching:* In this step, the teacher keeps in view the aims of education, teaching objectives, the subjects to be taught, the content to be taught, the levels of students, and available time
- *Engaging in Teaching Activity:* Here, the teacher takes

forward, his teaching activity as per his planning. According to Schon, at this level, the teacher should diagnose the difficulties of the students and should provide remedial measures immediately, and provide necessary guidance and co-operation to them.

- *Monitoring:* The teacher does this activity with the teaching activity. First, he/she keeps the students motivated. He/she sees to it what problem is being faced at which level and what its causes are.
- *Feedback:* In this step, the teacher evaluates the outcome of his/her teaching. In the situation of success, he provides feedback to the knowledge, and skill of different methods. In the situation of limited success, he diagnoses the causes of failure, and removes these causes and then provides feedback and re-feedback (Vanita Chopra, & Indrajeet Datta, 2011).

Various processes of Capturing Reflection

Many different approaches can be employed to become a critically reflective teacher. Observation of oneself and others (Peer Observation), collaborative inquiry, and exploring one's view of teaching through Writing self reports, Journal writing, Collaborative diary keeping (Written accounts of experiences), Audio-Video recording of lessons, Action research, Use of problem-solving and Decision making are some of the approaches practiced by reflective teachers (Tice Julie, 2011).

In the present study, the Reflective Teaching Training is provided to the Elementary Teacher Trainees by using the Instructional Package developed by the investigator on various processes of capturing reflection such as Journal / Diary writing, self reports and plan for improvement by reflecting on the feedback given by peer observation (Collaborative Reflection), and use of audio-video recording.

Teaching Skills

Teaching Strategies are the tools that teachers have at their disposal to engage learners and enable learning objectives to be met via effective teaching and learning and teaching skills are how they select and use these

strategies.

Teachers need to improve their competence in classroom procedures. They should increase the use of instructional techniques, methods and media related to the teaching objectives, communicate more frequently with students in the classroom, reinforce and encourage students' involvement in instruction and organise time, materials and equipment appropriate for instructions. Teaching competency is a skill which provides scientific basis for developing effective teaching- learning process.

Importance of Teaching Skills

The importance of teaching skills are classroom teaching and interaction can be made effective, create appropriate conditions of learning for achieving goals, teaching can be organized effectively and can provide empirical evidences about relationship of teaching variables.

The investigator after reviewing various literature on assessment of teaching skills, by observing the teaching skills implemented in diploma-in-education (D.Ed.) course, and by learning the different methods of teaching training given by DSERT karnataka, to in-service teachers, framed the tool-Class Room Observation Schedule Cum Rating Scale, to assess teaching skills for the present study.

Teaching Aptitude

The role of teachers in promoting the quality of an educational process and its products is well accepted. Teaching Aptitude is one of the major determinants of teacher effectiveness. It is also found to be a good predictor of teacher effectiveness. Kukruti (1990) in a study of some psychological correlates of successful teachers found that, there is a positive relationship between aptitude and success in teaching. The quality of Teacher Education can be improved by many methods viz., improving the curriculum, improving the practice teaching, etc. However, the most important one seems to be the aptitude in teaching. Therefore, in Teacher Education program, it is necessary to give adequate importance to Teaching Aptitude of Student Teachers (Ravi Kant, 2011).

Teaching Aptitude means aptness, inclination and

tendency for performance (teaching). It involves mental ability, attitude towards children, adaptability, and interest in Profession. Teaching Aptitude is a specific ability, potentiality, interest, satisfaction and fitness in teaching profession. According to S.C. Ghakhar and Dr. Rajanish, Teaching Aptitude helps the individual to acquire a required degree of proficiency or achievement in the teaching profession.

Literature Review

Review on Reflective Teaching

A considerable body of research has shown that Pre-service Teacher Education has a significant impact on early career of teacher's teaching skills (Darling-Hammond, L, 2000). In particular, Reflective Teaching has been shown to have a positive impact on Teacher Trainees perceptions of their own Teaching Skills leading to Professional Learning (Girija Navaneethan, 2011).

There have been many qualitative or case studies on reflective practices whose findings have been infused with enthusiasm on the part of trainee teachers and lecturers in favor of reflective approaches. One reason lies in the fact that teachers don't find much in conventional approaches in terms of ways to tackle their practical problems and reflective teaching has emerged as a response to the call for a substitute for the concept of method. According to Gimenez (1999), the heyday of reflection in teacher education was the 90's and it continues to be significantly dominant, so that today nobody engaging in the field of teacher education can deny its ubiquitous role in this field. In effect, reflection has been of great importance and has received noticeable attention in teacher education and teachers' educational development in recent years and is a key component of teacher development. Reflection has become an integral part of teacher education (Jay and Johnson, 2002, p. 73), and as Tabachnick and Zeichner (2002) put it, "there is not a single teacher educator who would say that he or she is not concerned about preparing teachers who are reflective" (p. 13) (Senem Sanal Erginel 2006).

Research on effective teaching over the past two

decades has shown that effective practice is linked to inquiry, reflection, and continuous professional growth. Reflective practice can be a beneficial form of professional development at both the pre-service and in-service levels of teaching. By gaining a better understanding of their own individual teaching styles through reflective practice, teachers can improve their effectiveness in the classroom (Ferraro, & Joan M, 2000).

Reflective Journal writing, a narrative mode of thinking, which is context dependent, contributes to the understanding of the observed or experienced action, and to the construction of knowledge on teaching. Taking this argument into consideration, reflective writing, which contains critical analysis and reasoning, has a narrative element in its nature. It focuses on the experience that is attached to its context, and reality is constructed considering the complexities of this environment. With regard to this, Colton and Sparks-Langer (1991) confirm that reflection has three elements – cognitive, critical, and narrative (Moon J, 2004).

Communication has an integral role in collaborative reflective process. In this process, which involves active self-evaluation, effective communication with equal peers and with colleagues, create a supportive interaction for professional growth. Within this context, collaboration is regarded to be an important factor in enhancing reflective thinking. While collaborating, pre-service teachers work together and communicate with each other on their experiences. It has interactive and reflective implications, as it entails cooperation and teamwork along with autonomy (Senem Sanal Erginel, 2006).

Review on Teaching Aptitude

Perveen (2006) revealed that, Discipline and Sex of the pupil teachers does not contribute towards teaching aptitude of male and female arts pupil teachers were compared, it was observed that, female arts pupil teachers secured significantly higher mean scores than their counterpart male arts pupil teacher. It was found that, teaching aptitude of the pupil teacher was significantly correlated with their general teaching competence, professional interest and academic

achievements. General teaching competence and professional interest of the pupil teachers significantly affect their teaching aptitude. In addition to this, effect of academic achievement on teaching aptitude of the pupil teaches was positive but not significant at the acceptable level of confidence. Usha (2010) in her study revealed that, there was a significant difference between teaching aptitude of effective and ineffective male and female teachers.

Adval (1952) in a study found that, female teacher trainees have greater aptitude in teaching than male teacher trainees. Banergy (1956) in a study of the inter-relation of two aspects of training viz., practice teaching and theoretical studies with general intelligence and teaching aptitude on a sample of student teachers found positive correlation between these variables. In the study of predictors of teacher effectiveness, Sharma (1971) found that, besides other variables such as academic grades, socio- economic status, teaching experience, teaching aptitude is also a predictor of teacher effectiveness (Ravi Kant, 2011).

Review of related studies indicate the importance of Teacher Aptitude and the variables that affect Teacher Aptitude. Some of the studies show gender differences in Teacher Aptitude, but some show no gender difference. Self-esteem, teacher effectiveness, success in teaching, Teacher competency factors, general intelligence, attitude towards teaching, academic grades, teaching experience, age, etc., are some of the variables that are related to Teacher Aptitude. Several studies show that Teacher Aptitude is capable of predicting teacher effectiveness. Teacher Aptitude is based on practice teaching and theoretical studies. The related studies reviewed, give a better understanding of the nature of Teacher Aptitude and the related variables and the relationship between them.

Review on Teaching skills

Teachers need to improve knowledge and skills to enhance, improve and explore their teaching practices. Teaching is a form of interpersonal influence aimed at changing the potential behavior of another person

(American Educational Research Association Commission, 1962).

Technical skills of teaching are specific aspects of the teaching behavior that are considered to be particularly effective in facilitating desired learning in students. Allen and Ryan (1969) at Stanford University pointed out in 'Microteaching', the importance of teaching skills starting from 'how to begin a lesson' to 'closing stage skills'.

Freidus (1997) describes a case study of one teacher/graduate student struggling to make sense of her beliefs and practices about what constitutes good teaching. Her initial pedagogy for teaching was based on the traditions and practices of direct teaching. Her traditional socialization into teaching made it difficult for her to understand the views of good teaching were being challenged in her practice. After implementing reflective teaching technique in her classroom enabled her to acknowledge and validate what she was learning. It highlights the importance of practicing reflective teaching pedagogy by teacher trainees during internship, so that they develop a competitive attitude.

An Australian Team of authors (Turney et al. 1973) developed a system of classing teaching skills under which the following seven categories have emerged.

1. Motivational Skills
2. Presentation and communication skills.
3. Questioning skills.
4. Skill of small group and individual instruction.
5. Developing student thinking
6. Evaluative skills
7. Classroom management and discipline.

Purpose of the Study

The present day teachers face more problem than earlier time. Now it becomes all the more vital to prepare teachers to meet these challenges. A number of recent studies have identified the pressing needs of reforming teaching methodology/ strategy of Teacher Education. In addition, the investigator has found that the term 'Reflective Teaching' is gaining importance in all areas of human endeavor. Even there is a shift of focus in Teacher

Education to develop Reflective Teaching among future teachers. Reflecting on classroom activities, use of Reflective Journal during the internship are also highlighted in NCTE (p.61).

In Karnataka, Elementary teacher education is an important concern, and there is a constant urge to increase the quality of teacher education, which inevitably contributes to the quality of education, as a whole. In doing so, the education faculties engage pre-service teachers in field experiences via school observations and teaching practices. Though the Reflective Practice is introduced in the revised D.Ed curriculum (2013-14), most of the Elementary Teacher Educators are not given the required inputs and training on Reflective Teaching Strategy. As a result, it has not been implemented effectively in D.Ed Institutions in Karnataka.

At this phase, the researcher of this study observed that, most of the pre-service teachers floundered, and they had difficulties coming to terms with the dilemmas they faced in schools as observers and/or practicing teachers. Besides these, often, both pre-service and novice teachers report the gap between theory and practice, complaining that, what they learned in the faculty and what they experienced in real classrooms were dramatically different. Working in District Institute of Education and Training (D.I.E.T.) as Lecturer, where focus is given for both Pre-service and In-service Training, the investigator found it relevant to study the effect of Reflective Teaching on Teaching skills among Pre service teachers.

In this study, the focus of analysis is on the development of teaching skills by reflection during pre-service practicum period by elementary teacher trainees of different levels of Teaching aptitude.

So in the present study, an effort is made to develop an Instructional Package on Reflective Teaching Training for Elementary Teacher Trainees to help them gain Knowledge of Reflective Teaching and to develop Teaching Skills by reflective practices.

Research Questions

The present study was undertaken with the following

Research Questions:

- Does Reflective Teaching Training develop Teaching Skills among Elementary Teacher-Trainees?
- Does the effect of Reflective Teaching Training differ with respect to the Teaching Aptitude of teacher-trainees?
- Is there an interaction effect of Reflective Teaching Training and Teaching Aptitude in developing Teaching Skills?

Statement of the Problem

It has been recognized that the Teacher Education program should be structured and modified in a way that enables them to respond dynamically to the new problems and challenges in the field of education, then only a teacher can help in national development.

Research on reflection has shown that effective practice is linked to inquiry, reflection, and continuous professional growth. Reflective practice can be a beneficial form of professional development at both the Pre-service and In-service levels of teaching.

Operational Definition of the Terms

Reflective Teaching Training

Reflective Teaching Training refers to the method of training given to the Teacher-Trainees (student teachers) to reflect on their teaching using different approaches and exploring one's view of teaching through writing reflective journals based on self evaluation, feedback from the mentor, peer observation as well as collaborative inquiry to identify strengths and points to be strengthened in the lesson and preparing an action plan to overcome the weaknesses identified to teach effectively in future classes.

In the present study, Reflective Teaching Training is the training given to the Elementary Teacher Trainees- both theory and practical skills, on various aspects of capturing Reflection such as-journal writing, self reflection reports (Teacher Diary), Teaching Skills based on the views of oneself and peers after teaching.

Teaching Skills

Teaching Skills are the technical skills of teaching used by

teachers effectively to bring about desired learning among students. The main activities of teaching are planning, organizing, leading and controlling.

Here Teaching Skill refers to (i) Planning and Preparation which includes lesson plan with instructional objectives, and creating TLMs and activities, (ii) Teaching-Learning Process involves-Content, Use of media, Interaction (verbal and Non Verbal, Classroom Management and Overall effectiveness. Teaching skill is measured by using the tool Observation Schedule cum Rating Scale framed by the Investigator.

Teaching Aptitude

Teaching Aptitude means aptness, inclination and tendency for performance (teaching). It involves the mental ability, attitude towards children, adaptability, and interest in the profession.

S.C. Gharkar and Rajanish defined Teaching Aptitude as a specific ability, potentiality, interest, satisfaction and fitness in teaching profession.

In the present study, the sample was grouped into High and Low Teaching Aptitude groups by administering the standardized Teaching Aptitude Test developed by S.C. Gharkar and Rajanish.

Elementary Teacher-Trainees

They are the Pre-service teachers at Elementary level undergoing a course of teacher training-Diploma in Education (D.Ed) assigned to teaching after 12th standard or P.U.C. The term as used by the researcher applies to Pre-service teachers/ teacher-Trainees/Student-Teachers /D.Ed. students, for primary school of both sexes at District Institute of Education and Training (D.I.E.T), Kumta, and other Teacher Training. Institutions of Uttara Kannada District.

Objectives of the Study

The objective of the present study is to find out the effect of Reflective Teaching Training in developing teaching skills. The investigator also aims to know the effect of high and low level teaching aptitude on teaching skills, and the interaction of both training and Teaching Aptitude in developing Teaching Skills. So, the objective of the study can be stated as below,

- To study the effect of Reflective Teaching Training, levels of Teaching Aptitude and their interaction on Teaching Skills, among Elementary Teacher Trainees.

Hypotheses of the Study

To study the effect of Teaching Training Strategies and levels of Teaching Aptitude and their interaction on Teaching Skills, the following null hypothesis was framed.

H₀1: There is no significant difference in the effect of Reflective Teaching Training, levels of Teaching Aptitude and their interaction on Teaching Skills among Elementary Teacher Trainees .

Since the hypothesis involved two main effects and one interaction effect, to make the analysis and interpretation more meaningful, three null hypotheses were generated from the above hypothesis and is stated as below.

H₀1.1: There is no significant difference in the effect of Reflective Teaching Training on Teaching Skills among Elementary Teacher Trainees.

H₀1.2: There is no significant difference in the effect of levels of Teaching Aptitude on Teaching Skills among Elementary Teacher Trainees.

H₀1.3: There is no significant interaction effect of Reflective Teaching Training and Teaching Aptitude on Teaching Skills among Elementary Teacher Trainees .

Tools Used in the Study

In order to measure the selected variables, the investigator used the following tools.

- Teaching Aptitude Test (TAT) constructed and standardized by S.C.Gakhar (Chandigarh) and Rajnish (Fazika).
- Instructional Package on Reflective Teaching Training prepared by the Investigator.
- A test on Knowledge of Reflective Teaching, constructed by the Investigator.
- Observation Schedule cum Rating Scale to measure Teaching Skills constructed by the Investigator.

Methodology

This is an experimental study. All the D.Ed students of Uttara Kannada district were the population of the study. Randomly selected 34 D.Ed students were the sample.

Sample was randomly allotted into control and experimental groups, and were grouped into high and low Teaching Aptitude after administering Teaching Aptitude Test- tool by S.C. Ghakhar (Chandigarh) and Rajnish (Fazika).

Experimental Design and Procedure

A 2x2 factorial design was used. Two training strategies (Reflective Teaching Training Strategy and Conventional Training Strategy) and two levels of Teaching Aptitude (high and low) were decided upon by the investigator.

Pre-experimental Stage

The teaching skills of both groups were measured prior to treatment during the practicum (practice- in teaching) by teacher- educators, class teachers and peers.

Experimental Stage

Orientation, theory and practical demonstration of Reflective Teaching to experimental group was done by using the instructional package on Reflective Teaching Training prepared by the investigator (Figure 1).

Post-experimental Stage

After the treatment to the experimental group, the teaching skills of both groups were measured during the practicum (practice- in teaching) by teacher-educators, class teachers and peers.

Analysis of Data

Analysis and Interpretation of objective are done on the

main effects of Teaching Training Strategies (Reflective and Conventional), Teaching Aptitude (High and Low) and interaction effect of the Training Strategies and Teaching Aptitude on Teaching Skills by applying descriptive and inferential statistics.

Since it was a 2x2 factorial design with covariate, the investigator used a two way ANCOVA technique. In the statistical analysis and interpretation of data, hypotheses were tested at 0.05 level of significance.

Major Findings of the Study

The main effect of Teaching Training Strategies on Teaching Skills of Elementary Teacher Trainees is found to be significant at 0.05 level of significance. It indicates that, there is a significant difference in the development of Teaching Skills between Elementary Teacher Trainees who were trained by different Teaching Strategies. Reflective Teaching Training Strategy has a significant effect in the development of Teaching Skills among Elementary Teacher Trainees, hence the null hypothesis 'H₀1.1: There is no significant difference in the effect of Reflective Teaching Training on Teaching Skills among Elementary Teacher Trainees' is rejected.

The analysis of the study shows there is no significant difference on Teaching Skills between Elementary Teacher Trainees with different levels of Teaching Aptitude. Hence, the null hypothesis, 'H₀1.2: There is no significant difference in the effect of levels of Teaching Aptitude on Teaching Skills among Elementary Teacher Trainees' is retained.

Similarly, from the analysis, it is found that, there is no significant difference in the development of Teaching Skills between the Elementary Teacher Trainees because of the interaction between Reflective Teaching Training and levels of Teaching Aptitude. So, the null hypothesis 'H₀1.3: There is no significant interaction effect of Reflective Teaching Training and Teaching Aptitude on Teaching Skills among Elementary Teacher Trainees' is retained.

Analysis of Covariance of Scores Related to Teaching Skills

Gain scores obtained by the Elementary Teacher Trainees

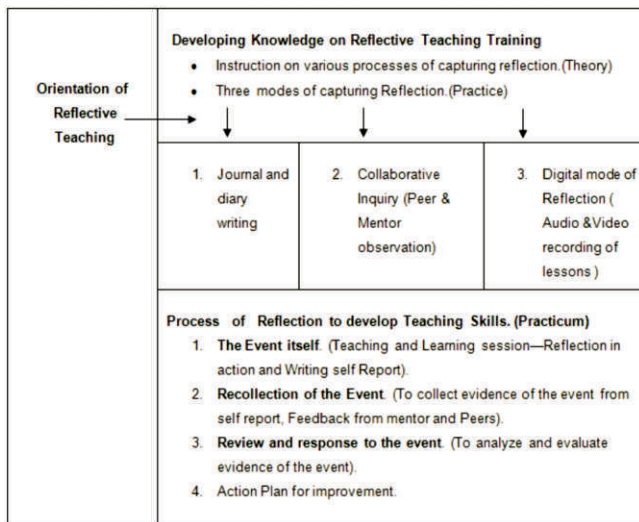


Figure 1. A Flow Chart of Procedure of the Treatment during Experimental Stage

on Teaching Skills were taken as scores on Teaching Skills and considered as criterion scores 'y2'.

In order to achieve the objective 2, the adjusted sum of squares with respect to the main and interaction effect was found out and it is presented in Table 1.

From Table 1, it is observed that,

- The main effect of Teaching Strategies on Teaching Skills of Elementary Teacher Trainees is found to be significant at the 5% level of significance, since the obtained F value 781.1877 is greater than the theoretical value 4.17 for degree of freedom 1 and 32. It indicates that, there is a significant difference in the development of Teaching Skills between Elementary Teacher Trainees who were trained by different Teaching Strategies.
- The F value for levels of Teaching Aptitude is 0.0002 which is significantly lower than the theoretical value 4.17 for degree of freedom 1 and 32. It indicates that there is no significant difference on Teaching Skills between the Elementary Teacher Trainees with different levels of Teaching Aptitude.
- The F value of the interaction effect of Teaching Strategies and Teaching Aptitude on Teaching Skill scores of Elementary Teacher Trainees is found to be 0.1035, which is lower than the F theoretical value 4.17 for degree of freedom 1 and 32.

So it is evident that, there is no significant difference in the development of Teaching Skills between Elementary Teacher Trainees because of the interaction between the levels of Teaching Aptitude and Teaching Strategies.

Hence the null hypothesis, "There is no significant

difference in the effect of Teaching Strategies on Teaching Skills among Elementary Teacher Trainees ($H_0 1.1$)" is rejected.

The null hypotheses, "There is no significant difference in the effect of levels of Teaching Aptitude on Teaching Skills among Elementary Teacher Trainees ($H_0 1.2$)" and "There is no significant interaction effect of Teaching Strategies and Teaching Aptitude on Teaching Skills among Elementary Teacher Trainees ($H_0 1.3$)" is retained.

To determine which Teaching Strategy is more effective in the development of Teaching Skills among the Elementary Teacher Trainees, the adjusted mean and SD of Training Strategies were calculated. The details are given in Table 2.

From Table 2, it is observed that, the adjusted mean of Reflective Teaching Strategy is higher than Conventional Teaching Strategy in the development of Teaching Skills among Elementary Teacher Trainees.

Hence, it is evident that, Reflective Teaching Strategy is significantly more effective in the development of Teaching Skills than Conventional Teaching Strategy.

From Table 3, it is observed that, the adjusted mean of Reflective Teaching Strategy is higher in Elementary Teacher Trainees with low level teaching aptitude than high level teaching aptitude. But adjusted mean of

Teaching Strategies	Adjusted Mean	SD
Reflective Teaching	32.004	3.302
Conventional Teaching	2.496	0.830

Table 2. Mean and SD on Teaching Skill Scores with respect to Teaching Strategies

Source of Variation	Sum of Squares	Degrees of Freedom	Mean Sum of Squares	F - Value	P - Value	Result
Main Effects						
Teaching Strategy	5772.37	1	5772.3750	781.1877	0.00001*	Significant (S)
Teaching Aptitude	0.0018	1	0.0018	0.0002	0.9876	NS
Teaching Strategy x Teaching Aptitude	0.7649	1	0.7649	0.7649	0.7500	NS
Error	214.286	29	7.3892	0.1035		
Total	598.7429	32				

*p<0.05

Table 1. Summary of 2x2 Factorial Design ANCOVA for Scores on Teaching Skills

Levels of Teaching Aptitude	Teaching Strategies (Adjusted Mean)	
	Reflective Teaching	Conventional Teaching
Low Aptitude	32.07	2.38
High Aptitude	31.77	2.72

Table 3. Mean Scores of Interaction of Teaching Aptitude and Teaching Strategies on Teaching Skills of Different Groups

Conventional Teaching Strategy is higher in elementary teacher trainees with high level teaching aptitude than low level teaching aptitude.

Since F ratio for interaction is statistically not significant, it is decided not to proceed for further analysis of the data.

To visualize the interaction effect Teaching Strategies and levels of Teaching Aptitude, graphical presentation of the Mean scores of Teaching Skills on Elementary Teacher Trainees is presented in the Figure 2.

From Figure 2, following observation can be made:

- There is no interaction effect of Teaching Strategies and levels of Teaching Aptitude on the development of Teaching Skills among Elementary Teacher Trainees.
- Reflective Teaching Strategy is more effective than Conventional Teaching Strategy in case of Elementary Teacher Trainees with low Teaching Aptitude and High Teaching Aptitude on the development of Teaching Skills.
- Conventional Teaching Strategy is more effective on Elementary Teacher Trainees with high teaching aptitude compared to low Teaching Aptitude on the development of Teaching Skills.

Discussion and Interpretation of the Results

Reflective teaching training was found effective in the development of Teaching Skills among Elementary Teacher Trainees. The findings of the present study

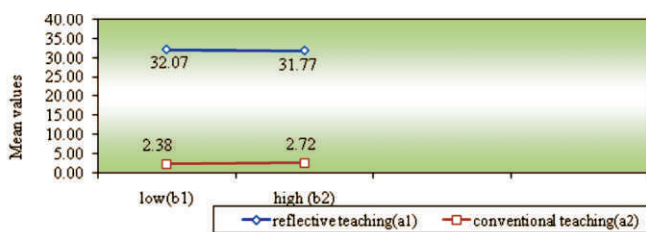


Figure 2. Interaction of Teaching Strategies and Levels of Teaching Aptitude with respect to Development of Teaching Skills

revealed that, it is possible to develop Teaching Skills among pre-service teachers by Reflective Teaching Training. The following review on research studies also reveal the importance of training to develop the Teaching Skills.

Mishra (2010) has given a historical base of the Teacher Training programme in India and highlighted certain skills which must be taken care of while providing training to the prospective teachers for effective transaction. These are, skill of introducing the lesson, skill of questioning, skill of reinforcement, skill of using black board, skill of explanation, skill of illustration with an example and others, which will enable teachers to be efficient and will ensure success of the teacher training programme. Mukherjee (2010) has presented a modified training strategy for skill practice of student-teachers which was tried out in 1992-93 session and designated it as Simulated Macro Practice (SMP). Findings revealed that SMP has been proved to be an effective strategy which must lay its impact on field practice it as a booster capsule for effective student teaching (Little, J.W., 2003).

Several research studies have proved that, critical reflection upon experience continues to be an effective technique for professional development. It is evident from the research conducted on reflective teaching practice that, teachers who explore their own teaching, through critical reflection, develop changes in attitude and awareness which benefit their professional growth as teachers, as well as improve the kind of support they provide to their students. Teachers engaged in reflective analyses of their own teaching, report that it is a valuable tool for self evaluation and professional growth (Vijayakumari S.N 2014).

It can be concluded with these discussions that, it is possible to develop Teaching Skills and promote professional growth among Teacher- Trainees by practice of suitable Teaching Training Strategies for effective teaching.

Educational Implications of the Study

Reflective teaching has contributed to furthering the field of Education as a whole in a number of ways. In this

connection Farrell (2004) states:

'Teachers can become more empowered decision makers, engaging in systematic reflections of their work by thinking, writing, and talking about their teaching; observing the acts of their own and others' teaching; and by gauging the impact of their teaching on their students' learning. In these ways, teachers can begin to locate themselves within their profession and start to take more responsibility for shaping their practice. This I call reflective teaching' (pp. 5-6).

Reflective practice, as mentioned above, has remarkably influenced the whole field of Education and the ESL/EFL context is no exception. Cunningham (2001), while referring to reflective practice as an "evolving notion and maintaining that there are [both] benefits and challenges to implementing reflective practice in ESL," mentions four benefits of flexibility, practicality, professionalism, and sustainability to this practice" (p. 2) (Senem Sanal Erginel, 2006).

The above findings from the review of literature on Reflective Teaching and Teaching Skills, and the findings of the present study has wider implication of the present system of education, specially Elementary Teacher Education.

- The present study reveal that Reflective Teaching Training Strategy is significantly more effective than Conventional Teaching Training Strategy to develop Teaching Skills among Elementary Teacher Trainees which is the base of teaching-learning process . In the process of teacher preparation, along with Conventional Teaching Skills, which the Elementary Teacher Trainee is expected to acquire, Reflective Teaching, self- evaluation, peer observation, feedback, action plan for improvement are also important to develop Teaching Skills.
- In the Elementary and Secondary Teacher Education curriculum lesson plan and observation schedule needs to be modified to incorporate the practice of Reflection in teaching-learning process.
- An effort is made by DSERT, Karnataka to introduce the Reflective-Teaching practice in new D.Ed. curriculum (2013-14). But the Teacher-Educators are to be given

knowledge of effective implementation of this strategy by workshops and trainings.

- Though theory on Reflective Teaching is introduced in new D.Ed. curriculum (2012-13), more emphasis is to be given for effective practical use of its processes.
- As Reflective Teaching Training Strategy is significantly effective to develop Teaching Skills among Elementary Teacher Trainees during Practice-Teaching period, more practices of Reflective processes are to be practiced for improvement in Teaching Skills.
- The present study revealed significant difference in Teaching Skills irrespective of their levels of Teaching Aptitude. As Reflective Teaching Training is also effective for Teacher Trainees with low Teaching Aptitude, Reflective Teaching can be used to improve Teaching Skills of Teacher Trainees with low Teaching Aptitude.
- In DEd. and B.Ed. courses, the Teacher Trainees practice 10 Teaching Skills during Micro-teaching sessions in simulation. As a beginner, they can improve these Teaching Skills by applying various processes of capturing reflection such as audio/video recording of lessons, self reflection and writing diary/ journal writing and action plan for improvement.
- The library of Teacher Education Institutions should be equipped with all resources on Reflective Teaching.
- Similar Instructional Packages along with learning materials needs to be developed by the Education Department with the expert committee support, experienced team of competent teachers, and field testers for the ready use of In-service teachers and training should be given to them on this.
- Even the in-service teachers can improve their Teaching Skills by using technology in Reflective Teaching processes such as audio- video recording and self-evaluation, peer observation and feedback by them through social media such as Whatsapp, Twitter, blog, etc.

Conclusion

By reviewing the literature on Reflective Teaching and by the present study, it is recommended that, Reflective Teaching practice is very essential in all professions as it helps in having a deeper understanding of one-self by

self-evaluation and to improve in that field. In an era where reflection in teacher education is regarded as an effective approach to teacher education, this study provides a closer and comprehensive analysis on the phenomenon of reflection in pre-service teacher education. In addition, this study conducts a detailed analysis on the developmental process of pre-service teachers' reflective thinking. Within this process, it sheds light upon how various methods, such as written account of experiences through Journal and Diary writing, by self-observation, peer observation and self-analysis help in self reflection and plan for improvement. In relation to these, the findings of this study will allow course instructors and curriculum designers in teacher education to design courses and programs accordingly, and to assist pre-service teachers to get a good start in their practice.

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