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CHAPTER – II

REVIEW OF RELATED LITERATURE

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2.1 INTRODUCTION

Review of the previous related studies is an essential part of any investigation as it provides the 'feel' of the field in advance where the investigator would be working on. It gives the investigator a background of thinking of a problem area, the clear prospective of the problem under the study, helps in planning the study properly and selecting or developing tool for data collection, and adopting techniques for the analysis and interpretation of data. In this chapter an attempt has been made to present the previous studies in brief, which have bearing on the present investigation in the area of in-service teacher education. The review has enriched the investigator with new understanding and insight in the concerned area which led the present investigation into fruition. The survey of related literature, besides forming one of the early chapters in research report for orienting readers serves the following purposes.

1. To show whether the evidence already available solves the problem adequately without further investigation.
2. To provide hypothesis, ideas, theories, or explanations valuable in formulating the problem.
3. To suggest methods of research appropriate to the problem.
4. To locate comparative data useful in the interpretation of results, and
5. To contribute to the general scholarship of the investigator.

The present study deals with the in-service training programmes conducted by DIETs of Gujarat State. The following caption shows the recent trends in research in the field of teacher education.

2.2 RESEARCH PERSPECTIVE IN TEACHER EDUCATION

Research is a *sine qua non* of in any of human endeavour. Its contribution lies in generating a body of knowledge for designing functionally effective programme of action, in searching solutions to the professional problems encountered in implementing the designed programme or activities. Any system desirous of

improving itself undertakes a search into what it has, what it needs to have and how the gaps could be bridged?

Educational research in India is relatively a recent phenomenon of post-independent period. The first department of education was started in 1917 in Calcutta University and the first degree solely based on dissertation was awarded by Bombay University in 1936 and the first Doctoral degree was awarded in 1943 by the same university. It is only after the independence, most of the universities introduced programmes in Education and researches in Education gradually picked momentum. However, researches in the areas of Teacher Education reflected a very slow progress (see table 2.1).

2.3 STATUS OF RESEARCH IN TEACHER EDUCATION

The first effort to take stock of educational research was attempted by the NCERT in the forms of bringing out the Third Yearbook of Education focusing on review of educational research including researches related to Teacher Education in 1968. Most studies were dissertations submitted for Master's Degree of various universities. Later on, under the editorship of M.B.Buch, in 1974 the First Survey of Research in Education was brought out and later on three surveys were brought out in 1979, 1987 and 1991. By now the publications of surveys of researches from time to time have been institutionalized at NCERT level with the publications of the Fifth Survey carried out from 1988 to 1993 and work on the Sixth Survey covering the researches carried out between 1993 to 2000 is in progress.

Analysis of the studies reviewed by various surveys in India delineates that though there has been an increasing trend in the number of researches conducted in relation to Teacher Education, the percentage of these researches as compared to overall researches has been given in the following Table.

TABLE NO. 2.1
RESEARCHES CONDUCTED IN EDUCATION AND TEACHER EDUCATION

	Survey	Total Number of Researches in Education	Number and percentage of researches in Teacher Education
1.	First Survey of Research in Education (up to 1972)	731	46 (6.31%)
2.	Second Survey of Research in Education (1972 to 1978)	839	62 (7.39%)
3.	Third Survey of Research in Education (1978 to 1983)	1481	121 (3.17%)
4.	Fourth Survey of Research in Education (1983 to 1988)	1674	145 (8.66%)
5.	Fifth Survey of Research in Education (1988 to 1993)	1831	105 (5.74%)
	Total of 1 to 5	6556	479 (7.30%)
6.	Districts Primary Education Programme (DPEP) Research Studies	471	60 (12.7%)
	Total of 1 to 6	7027	539 (7.67%)

Besides the above, The Indian Educational Abstracts are published every six month by NCERT and 1963 research studies reported in these abstracts. Educational Consultant India Ltd. brought out two volumes on researches carried out on DPEP interventions from 1994-2002. Four hundred and seventy-one research studies are reported and out of this, 60 studies were conducted on Teacher Education.

A synoptic overview of the nature of the reviews of studies in the area of teacher education reveals the following:

1. As many as **479** studies were conducted by various institutions on Teacher Education reported by five Educational Surveys completed by Buch (1974, 1979, 1987, and 1991) and NCERT (1997). Most of the

- findings of these research studies were not taken into consideration in formulation of teacher education policies for its improvement. These studies have remained mostly academic in nature. Efforts should be made to share and disseminate the findings of studies to the policy makers.
2. The new structure of teacher education was set up in the light of the National Policy on Education, 1986 in the country. New institutions like the IASEs, CTEs and DIETs were established under the centrally sponsored scheme of teacher education. The SIEs/SCERTs and University Departments were also recommended to be strengthened. But research component still continues to be the weakest area of their operation. Many researches and evaluation studies on the functioning and operationalisation particularly on DIETs supported this view (NCERT 2000, NIEPA 2001, and Yadav 2000). Therefore there is need to develop the capacities of these institutions for conducting more researches with a view to providing feedback for improving the quality of education.
 3. There were few studies conducted on the functioning of DIETs, but studies on the functioning of IASEs, CTEs and SCERTs are less in number. Researches need to be conducted on these institutions with a view to providing feedback for improving their functioning.
 4. PMOST and SOPT programme for teachers were launched in the country as one of the components of centrally sponsored scheme of teacher education. In later studies Kundu (1989), Bhattacharjee (1989), Gupta (2000) and Yadav (2002) found that teachers gained in their knowledge in terms of academic awareness and transfer of training to classroom practices. However, these studies reflected on the inadequacies of physical facilities, non-availability of training materials in time and absence media support at training centres. These programmes need more researches to verify the findings before generalization and revising the scheme.
 5. The focus on decentralization planning and management has been made significantly in DPEP project. A lot of efforts to link teacher training with school processes and classroom practices have been made. Many projects on teacher education were undertaken under this project and

evaluation was mostly done by state authorities. The studies covered areas like training needs, improving competency, teacher policies, status of teachers, teacher effectiveness, intervention areas for improving teaching, effective classroom transaction, teacher absenteeism etc. Though all these studies have been conducted with full financial assistance by the programme yet the research component has not been institutionalized and national level studies are scanty in nature. This aspect needs to be looked into with the SSA Programme.

6. The training structure at the Block and Cluster level have created under DPEP project. The remaining Blocks and Clusters are being covered under SSA programme. The monthly meeting and training programmes are organized in these institutions. Some studies have reflected that these were not performing their role as perceived. Proper linkages are not established with DIETs. Therefore, more researches are required to improve their functioning.
7. In many countries, two models on teacher education are mostly followed. One is a general course on teacher education in which academic courses are followed by professional courses. The other one is integrated programme on teacher education on which both academic and professional courses are integrated. Researches in this area are very few. They are to be conducted to see the effectiveness of teachers emerging from the two models.
8. The curriculum for teacher education from pre-primary to higher secondary levels has been revised from time to time for meeting the changing needs of the society. But curriculum is revised mostly on *ad hoc* basis in the absence of research support. The curricular areas are added and deleted on the basis of 'experts' opinions or the recommendations of committees. All these happen without considering the research findings. Therefore, teacher education curriculum needs to be constructed on the basis of research findings so that it can be synchronized with the requirement of school curriculum.
9. Practice teaching should be the central focus for the researcher concerned with the quality of teacher education. But very few research

studies have been conducted in this area. The teaching practices are completed hurriedly; and not taken seriously. The lesson plans are not prepared and supervised properly and feedbacks are not provided to students for improvement. There is a lack of cooperation and coordination between training college and practice teaching schools. Sometimes school authorities reported that such programmes disturbed the school routine (Yadav 2000). This area needs more number of researches for evaluating all dimensions of Practice Teaching.

10. The duration of one year B.Ed programme is not adequate. It is more theoretical in nature and the internship is not adequately undertaken. Therefore, a two year B.Ed. programme on experimental basis is being undertaken in four Regional Institute of Education (RIE) and Gujarat Vidyapith, Ahmedabad. The evaluation study on different components of two year B.Ed. course is to be undertaken.
11. In-service education enhances the capability and competency of teachers, but this area has not been given adequate attentions by researchers (Yadav, 2002). The programmes were not organized on need basis. All the teachers were not given equal opportunities. More researches covering all components of in-service education are to be undertaken.
12. Due to the impact of globalization, liberalization and privatization the role of teacher is changing. Studies on the role of teacher are not available. There is a need to have studies on the teachers' role in their functions and task in changing scenario of society. These researches may give directions in the role of teachers.
13. Many studies on qualities of teachers were undertaken. These studies were related to attitude towards teaching, professional competence and knowledge, classroom management, interpersonal relations with students, colleagues and superiors, institutional facilities, problems faced by teachers and teacher educators. The findings of these studies revealed that majority of teachers have adopted teaching career due to compulsion than preference. They do not have a favourable attitude towards the teaching profession. More researches are required to study this aspect.

14. The army of para teachers is required in both the formal and non-formal systems of education. They are mostly unqualified, untrained and low paid. There is an urgent need to conduct researches on functioning para teachers so that permanent policy of their professional development can be formulated.
15. Most of the research studies conducted by the researchers and institutions are quantitative in nature and rigorous statistical design and techniques are used. Very few researchers are conducted by using qualitative methods. Qualitative studies are to be promoted for arriving at more meaningful results.
16. Indira Gandhi National Open University (IGNOU) has launched the teacher education programme like Diploma in Primary Education (DPE) for untrained teachers through distance mode for the North Eastern States. Two year B.Ed programme for serving teachers is also being run by IGNOU. The impact of this programme may be studied. The findings may be used for formulating policies both for pre-service and in-service education programmes.
17. There are many schools functioning with two or three teachers and teaching in a multigrade situation. There is a need to conduct researches on multigrade situation so that the input in teacher education programme both pre-service and in-service can be included in a scientific way.
18. ICT is considered essential for a knowledge society. The use of ICT including radio, television, computers etc. provide opportunities to institutions for sharing resources through networking. The organization of training for teachers through teleconferencing has increased the effectiveness of ICT in terms of coverage and quality for various teacher education programmes.
19. Follow up studies increase the effectiveness of the training programmes. Very few attempts have been made to undertake follow up studies either at the pre-service level or in-service level. Yadav (2000) reported that follow up studies on in-service education contribute to the development and substance of professional competencies of teachers. Researches' attention is required for such studies.

The present study deals with the in-service training programmes conducted by the DIETs of Gujarat States. Therefore the studies reviewed and presented hereunder covers different types, which can be classified as follows:

- ❖ **Studies related to in-service teacher education programme**
 - Studies conducted abroad
 - Studies conducted in India
- ❖ **Studies related to the working of DIETs**

2.4 STUDIES RELATED TO IN-SERVICE TEACHER EDUCATION PROGRAMME

2.4.1 Studies conducted abroad

Heaton (1988) studied the effects of teacher training on student and teacher performance of listening and questionings skills. The main objective was to examine the difference in performance of teachers who received in-service training on interpersonal skills of listening and questioning and instructional processes and teachers who received in-service training only in instruction processes. Teachers in both groups used identical materials to train students in listening and questioning skills. Differences in student performance were also examined based on the kind of training the teachers received. All teachers and a forty percent of sample of student received pre-tests and two post-tests, which were evaluated and scored by thirty-nine trained raters. Inter-rater reliability was 0.86. Teacher training in listening and questioning skills has a powerful, but short-terms effect on teachers' performance of listening and questioning skills. All students' improved significantly, but no significant difference was found between treatment groups in student post-test or delayed test performance.

Blunck (1993) evaluated the effectiveness of the Iowa Chautauqua Science In-service Programme. Study examined the growth in teachers' confidence related to teacher reculturing behaviours over a six-year period from 1986-1992. "Reculturing" behaviour empowers teachers' to work with students, other teachers, administrators, parents, and community experts in new ways as part of a Science, Technology, Society (STS) approach. The Iowa Chautauqua

programme has been validated by the National Diffusion Network as a model in-service programme. The Teacher Confidence Scale (TCS) was used as pre-test and post-test survey to measure changes in teacher confidence at the end of the Iowa Chautauqua in-service experience. Analysis of variance and t-test were used to analysis the data and found that teacher confidence improves significantly when a teacher is involved in the programmes for longer duration, teacher at all grade levels were affected equally in terms of growth in confidence with any given year. The Iowa Chautauqua Programme has been able to stimulate steady growth in teacher confidence for a number a "Reculturing" behaviours across the six year period.

Chadwick (1999) conducted a case study of four elementary schools involved with a professional development programme in arts. This programme focused on the integration of arts though out the curriculum with intension of using the arts as a methodology for learning other subjects area. The research instrument for this case study was the interview, questionnaire, and the examination of existing documentation, and observation of the programme. The study found that most variables within the programmes origin, operation, and evidence of results were consistent among all four school sites. A common philosophy of programme was understood by participants and administrators. There was a need for planning time between the arts coaches and the teachers. Advisory councils, parents, and the community were not generally aware of the operation of the programme. Evidence of results indicated the integration of the arts increased positive students' attitude and efforts. Students achieved through the arts, and made gains in academics following their involvement in the programme. Teacher attitudes indicated a favourable view toward the programme; most will continue to teach though the arts. Data collected through this study suggested the integration of the arts can be a powerful teaching tool for teachers and an interesting way for students to learn. Informing parents and community about the existence and results of the programme may generate additional support. The development of additional form of the student's assessment would be beneficial.

Fleischman (1999) studied the role of state education agencies in in-service teacher professional development in technology. The purpose of this study was to examine the role of state education agencies in promoting and supporting in-service teacher professional development in technology within the context of state systemic reforms. Exploratory, qualitative research was conducted using the biggest finding in Kentucky and Vermont is that technology is increasingly embedded in overall state making for reform. At the state level, policy rhetoric and actions are largely about constructing strategies to convey to districts and schools the importance of technology as a tool to support state reform goals for student learning. Professional development to support teacher and administrator knowledge and skills are beginning to embed technology as a pedagogical tool within standards based curriculum units. While teacher professional development in basic skills required in many schools and districts, there are growing dialogues and actions at the top of the two state policy systems to fill integrate technology into standards-based professional development offerings. Technology is beginning to transform from a separate strand of reform, or reform component, to a seamless tool that support the overall reform goal in both states of high academic performance for all students. Further research should focus on the appropriate role or teacher performance standards in technology among the array of policy instruments used by state to promote and support in-service teacher professional development in technology.

Long (1999) studied the impact of school university partnership on the professional development of teachers. It also provided testimony about the professional development habits of teachers working in Professional Development School (PDS) setting within the New York Public School System. Ultimately, this research hoped to provide information about the impact of the school-university partnership on teachers' practice.

The methodology employed a case study approach, involving teachers in three Professional Development School Partnership (PDSP) sites, to explore the particular issues related to these teachers and their professional development. To address the research questions in this study, the researcher used qualitative

methods of data collection and analysis. The data were collected in three ways: surveys, interviews and observation.

The findings reflected that the partnership was thought to be philosophically sound; it helped to create better teachers; it provided opportunities for growth, it helped them to combine research and practice; and provided interns who were energetic and intelligent, when asked about the weaknesses of the PDSP, teachers mentioned low, cliquish participation, lack of communication among the university-based and the school-based participants, low visibility in terms of accomplishments, and a weak commitment on the part of all involved stakeholders. In accordance with the literature, teachers reported using reflective practice, collaboration, pre-service teacher education, and action research for improving their practice.

Richmond (1999) studied an evaluation of how teachers implemented training received in an intensive arts staff development programme. The purpose of this study was to determine the level of implementation of training received by teachers in an intensive arts staff development programme. Additionally, it reported to what extent teachers implemented the innovations in their classrooms during the academic year following the training. The study also looked at the impact of teachers. Students and artists learning together in a professional development institute. The sample in this study included seven teachers representing urban, rural and suburban school districts who volunteered to participate in the Arts Alive Institute. Each teacher was administered a survey and was interviewed to determine the level of use of the training he or she received during the summer training institute. Additional data were obtained from classroom documents such as lesson plans, teacher journals, students' journals, students' portfolios and direct observation. The data were analyzed using the interview protocol of the Level of Use Interview, an instrument from the Concerns Based Adoption Model. Results of the study indicated a high level of implementation of training received at the arts training institute. Teacher application of arts skills and arts integration into classroom curriculum was evidenced. Data revealed changes in teachers' attitude toward students and a new sensitivity to students as diverse learners. Teachers

indicated an elevation in self esteem, an enhanced appreciation of the arts, and the desire to immerse the arts into their personal lives. Artist-in-residence programmes were shown to influence the level of implementation of training and served to emphasize the need for direct, intensive follow-up of the training teachers receive.

Rutter (1999) studied the professional growth of two multidisciplinary teams within a professional development school. Research has shown that professional development to teacher has rarely succeeded within a learning vacuum. Teachers need support, follow through and opportunity to use the content information or teaching strategies in which they have just been trained in their own contexts. A more effective concept of professional development is needed in order for teachers to truly develop professionally and for school and student learning to improve. Narrative case studies were drawn from interviews, journals and observations for two teams of teachers and their administrators within a (PDS). Overall, it was found that school cultures are very particular things made up of individual mind and action that provide the context that drives the culture. A good leader can use the mission and philosophy to focus and channel these energies and work to create something that benefits the whole as well as the parts. It is the individuals involved however, who have to trust one another and agree to work together; find ways to make connections among their individuals' interests and those of the others, and share their knowledge and resources to make the whole better as they better themselves. Within this framework, these individuals are professional committed to their profession of teaching and to their personal professional development. Recognizing this, the schools can work to support these practices and the individual understands of their ultimate power within this highly complex relationship. Knowing this, the individuals involved can choose to become life long learners, teaching professionals committed to their learning community.

Franks (2000) studied the effectiveness of the "Trainer of Trainers" model for in-service science professional development programmes for elementary teachers participating in the Mathematics and Science education cooperative. In this

professional development model, a core group of teachers received professional development sessions taught by science education professors. After the work sessions for the core groups of teachers, training materials and equipment were distributed among the five elementary schools within the school district. The target population of this study included approximately two hundred teachers in the MSEC programme who taught grades kindergarden through six in five different elementary schools. Both qualitative and quantitative methods were used in data collection. Focus groups, interview, observation and survey instruments were the primary sources of data collection. Triangulation methods were used to establish validity and verification of data. Analysis was an on going process that included several levels of affinity groups, interrelationship diagrams, path diagrams and system influence diagrams. Interview and feedback surveys were also used to evaluate the problem under investigation. Teachers consider the state-mandated assessment test to have the largest impact on the school curriculum and to be the primary reason that teachers could not find time for science teaching. Furthermore, they believed that the administration played a huge role in determining if science took a back seat at their respective schools.

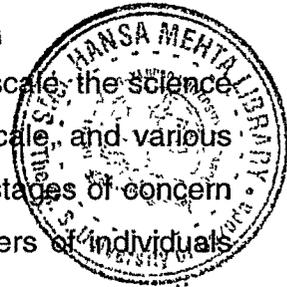
Martinez (2000) studied the analysis of embedding teacher leadership in professional development. This study was an examination of how a teacher leadership role-presenting professional development to colleagues-was encouraged through a science education professional development programme. A qualitative methodology was used, involving fifteen science teachers. The primary data source was semi-structured interview. Secondary data sources were documents submitted to the programme by the teachers and observations of their physical classrooms. There were two major findings. First, after fulfilling the requirement of the National Science Foundation (NSF) grant, seven of the nine teachers with no prior experience presenting professional development presented additional professional development to colleagues. The most important attitude influencing this new capability were: an acceptance of the Microcosmos philosophy and curriculum; and having a degree of comfort with the biological content. The most important behaviours were; having a desire to learn, being an effective communicator, and having self-initiative. Six attributes

of the Microcosmos professional development programme are described which encouraged this teacher leader role. The second findings was that the fifteen science teachers considered the concept of “sharing knowledge with colleagues” to be a major quality of teacher leadership. A new definition of teacher leadership is offered.

Rowe (2000) studied the perceptions of physical education teachers about the design and implementation of in-service training. The purpose of this case study was to use teachers' perspective of their Exemplary Physical Education Curriculum (EPEC) Project in in-service training experience to provide feedback for the design of future EPEC in-service training to meet the needs of physical education teachers. Even if the fifty-five teachers who experienced EPEC K-2 teachers in-service training at three targeted locations during 1998-99 agreed to share their perspectives on four topics related to the training, Context, Content, Change and Support. These teachers attended one focus group held in their geographic area approximately two months after they attended EPEC in-service training. Each focus group session was audio-taped and transcribed for analysis. The data were used to describe perceptions of teachers that could be designed future EPEC in-service training. Analysis of the data showed that issues of Context, Content, Change and Support all need to be considered by those who wish to design in-service training to meet the needs of teachers.

Stewart (2000) studied the evaluation of professional development training for elementary teachers in urban and Native American schools using design technology and the learning cycles. The concerns included whether the participating teachers accepted Technology and Invention in Elementary Schools (TIES) methodologies as viable methods of instruction and what factors affected implementation over time. Participants included 32 teachers from urban schools in Ohio and from Native American schools in Arizona and New Mexico, who took part in the TIES training in the summer of 1998. The programme was evaluated using ex post facto and quasi experimental research design and included both qualitative and quantitative methods. Data were collected using the of stages

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concern, questionnaire, the Shrigley Johnson Science Attitude scale, the science teaching efficiency beliefs instrument, the work environment scale, and various surveys. Through this study, a new method for evaluating the stages of concern questionnaire was developed to determine if significant numbers of individuals shifted from preliminary stages of concern to higher order concerns over time and predicted in the research. This method proved to simplify analysis and provided a means to determine statistical significance based on Peak stages scores over time. The TIES training also proved to be a generalized professional development model. The urban school teachers differed significantly from the Native American school teachers on many measurements, yet there was no significant difference between the gains made by two different groups of teachers. TIES training also included many factors from organizational change theory which were considered to promote the implementation of change. The result indicated that teachers made significant gains implementing methods learned during training over time.

Aeschlimann (2001) studied the effect of mentoring on secondary mentor teachers within a professional development center. This qualitative study examined secondary veteran teachers and their perceptions of professional growth through the mentoring activities assigned within a PDC at a small, Midwestern University. A series of interviews were conducted one year after six veteran teachers from four small, rural school districts had been involved in the PDC programme. The data are presented as case studies. Findings indicated that performing new duties and having the freedom to explore issues of individual concern were important in developing new skills, but in and of themselves, were not central to authentic professional growth. Although doing new tasks is a part of professional growth because it builds confidence in veteran teachers, it did not change the thinking of teachers in this study about educational issues.

What emerged as an indicator of professional growth was the degree of collegiality and reflectivity in the teachers' approaches to educational issues. Those teachers who actively participated in opportunities to suspend traditional beliefs, to question and share concerns in a trusting environment and to engage

in professional dialogue with others showed evidence of authentic professional growth. Those teachers, who engaged in such activities on a superficial level or not at all were unable to articulate a deeper level of conceptualization about their teaching.

Baker (2001) studied the participants' perceptions of a professional development programme called "Physical Education in the Rough" (Rough) teacher-training institute. The three major areas focused on (1) teachers' perceptions of the structure and content of the teacher training institute, (2) how the training influenced them as teaching professionals; and (3) how the training influenced their education programmes. The method of collecting data involved interviewing 49 teachers who attended the Rough through individual interviews and focus groups. The audio taped interview were conducted by one person of a three member interview team and transcribed to hard copy. The researcher then analyzed the transcripts. The major findings of the study showed that of the 49 teachers interviewed, 41 teachers made significant changes in their programmes. These changes included a combination of content, collaboration with core teachers, administrators, parents and community citizens. The attributes of the Rough that influenced the teachers were; (1) respect shown to the teachers and their profession; (2) organization and structure of the training; (3) collective participation within the sessions; (4) duration; (5) active learning; and (6) coherence of sessions and participants. The participants in this study stressed how they were imparted personally by the demonstration of respect shown to them and their profession by the instructors and staff. This acknowledgment gave the teachers self-confidence and an inner strength. The conclusion is that teachers can be influenced to change professionally concerning their working relationships with peer teachers, core teachers, parents and community citizens. Teachers can also be influenced to modify or radically change the programmes they conduct. Careful implementation of appropriate professional development programmes can influence teachers.

Disla (2001) studied teachers' perception regarding staff development practices in the Department of Defense Department School system. A representative

sample of 48.7% of classroom teachers in the elementary and secondary schools of the department of Defense Dependent-Japan district was invited to participate in the study. Of the 390 teachers invited to participate, 179 responded. These respondents were asked what they perceived to be important practices in a staff development programme. The survey focused on three areas: context, process and content of staff development programmes. The most significant area stressed by respondents was the context of a programme. Teachers also believed that administrators must be viewed as sincere in their support for the staff development process in their support for the staff development process in their school and district and that local decision-making is imperative for the success of a programme. There were limited differences based on educational level, age and gender. Teachers with more experience were the most critical of the context in which a programme would be presented. It is recommended that teachers' needs be assessed within a district before an effective model of staff development is created or implemented.

Ray (2001) studied the impact of staff development training on technology integration in secondary school teachers' classrooms. The purpose of this qualitative study was to explore the relationship between a particular staff development design and the extent to which the integration of technology in classroom practice occurred after the training. It also noted whether or not teachers who participated in the staff development would become larger in technology integration. Out of the twelve participants, ten were using technology in the classroom as the part of the classroom activities to support the curriculum and enhance student learning. All of the teachers used skills learning at "Teacher Technology Training" to research in preparation for class and to create instructional material. Teachers reported a change in teaching using technology: increased assess training all source, especially current source; shared teaching with experts in the field, reputable internet sites and students who presented information; ability to strengthen interest and understanding by presenting information visually using Compact Disc's (CD), video clips, virtual tours and the internet; greater opportunity to communicate with experts in the field, peers, administrators, parents and students through e-mail and web pages; and the

ability to make easily changes in notes, lectures, presentations, activities and tests.

Sherrill (2001) studied probationary teachers' perceptions of the extent to which their pre-service and in-service education, respectively, influenced their recruitment to the teaching profession and their plans to continue a career in teaching. The result indicated that teachers' perceptions of their recruitment to the teaching profession and plans to continue a career in teaching were influenced by their pre-service education and in-service education after they assumed a classroom teaching position. Results showed that decisions to have career longevity in teaching, was influenced by gender and by size of school district population. The 14,815 probationary teachers in public classrooms in Missouri made up the population of this research project. Surveys were sent to a selected sample of 750 classroom teachers who made up this population. Twenty-four teachers supplied written comments. Twenty-two of those respondent commented that their pre-service education activities did not prepare them for classroom teaching. Six teachers commented that the most valuable pre-service instruction was participating in the "real world" of classroom instruction. Twelve expressed that school climate and current issues were greatest value. Issues such as administration support, extra curricular duties, teaching in areas in which they were not trained and responsibilities other than classroom teaching (i.e. meeting which involved instructional planning related to students' special needs, after school duties, parent and community support) were emphasized and contributing to stress and job dissatisfaction.

Smith (2001) studied the teacher's perception of staff development activities. The purpose of the study was to investigate the relationship between teachers' perceptions of staff development and their perception of the communication climate at different building levels; elementary middle and high school. This study was significant because by understanding the relationship between teachers' perceptions of in-service programmes and the communication climate within the school, central office administrators and building administrators can establish programmes to improve staff participation in in-service programmes.

One hundred sixty-four teachers from the Southfield Public Schools provided the data for this study. The Organization Communication Climate Survey, Educational Participation Scale, a short demographic survey were used to gather data needed for the three research questions posed. The results of this analysis provided no evidence that the perception of the six sub scale differed among teacher at the three building level: elementary, middle and high school. A comparison of the mean scores indicated that teachers were more willing to participate in staff development for cognitive interest, professional advancement, social contact and escape/stimulation. The communication climate perceived by the teachers at the building levels: elementary middle and high school was positive. Sergiovanni and Starratt (1993) believed that when a healthy school climate exists, levels of openness and trust prevails. Principals can provides opportunities for teachers to dialogue, share technical skills and use collaborative problems solving to determine what works best for assisting students to achieve optimum academic success.

Starkweather (2001) studied the training of teachers to give effective command and studied its effects on student compliance, academic engagement and academic responding. The present study using a multiple baseline design across subjects, evaluated whether training teachers to give effective commands alone and in combination with verbal praise for appropriate classroom behaviour and compliance would result in increased compliance, academic engagement and academic responding. Results indicate that increasing effective teacher commands resulted in increased rates of students' compliance of 7% for student one, 15% for student two and 17% for student of three during the effective commands alone face of the study. Total compliance was increased over baseline 17% for student one, 28% for student two and 23% for student three across all phases of the study. Academic engagement and academic responding combined was increased 10% for student one, 5% for student two and 16% for student of three during the effective commands alone face of the study. Academic engagement and responding combined was increased over baseline levels, 16% for student one, 14% for student two and 25% for student of three across all phases of the study. Results are discussed in terms of identifying

strategies that will results in increased compliance and academic engagement and responding through the use of antecedent condition that are beneficial to an entire class setting.

Casteneda (2002) studied the teachers' perceptions of effects of professional development on teaching practice and student learning. The study sought to test whether multidimensional professional development programmes are preferable to a traditional one, which typically, consists of taking a graduate course. It compared teachers' perceptions about the effects of three programmes for professional development on their practice and student performance. Descriptive data were collected to provide an accurate description of the three programmes. Participants' observations of professional development sessions, informal and formal interviews of teachers, administer and facilitators were among the data collection tools and used during the first two years of the study to provide a detailed description of the actual programmes. The survey results indicated that teachers perceived that professional development could be most effective for improving their teaching practice and student learning when the professional development programmes are intentional, on going and systematic. The non-traditional, multi-dimensional professional development was found to be more effective than the traditional model.

Oberlander (2002) studied the effects of a professional development programme to prepare teachers to use problem-based technology enhanced learning strategies. The purpose of the study was to explore the impact of a systematic effort to support a group of K 12 teachers in adopting technology-enhanced Problem-Based Learning (PBL) strategies in their classroom practice. With Grabinger's Rich Environments for Active Learning (1996) providing the conceptual framework for the teaching context and the ADISE Model of Technology Integration (Lasley, Matezynski, & Rowley, 2002) providing a conceptual link for integrating technology into PBL training, ITEL Partaer Schools Programme trained a class of in-service educators. Both quantitative and qualitative methods were used in the quasi-experimental post-test only design. A demographic survey and the REALs Beliefs Inventory (RBI) were developed and

administered to the intervention group of 17 K 12 in-service teachers and a comparison group of 14 K 12 teachers. The REALs Environmental Inventory (REI), the Self-Assessment Survey (SAS), and a Post-Inventory Survey were developed and administered to the intervention group to determine teacher perceptions of the training. The researcher reviewed the PBL Units of Practice submitted by 15 teachers after the ITEL Programme for evidence of technology use. The demographic survey revealed the two groups were similar in technology goals and objectives, although older, more experienced teachers comprised the intervention group. A t-test indicated a statistically significant difference between group scores on RBL $t(29) = -2.11, p < .05$. Teachers used the ADISC models from the training in their own unit design and implementation. Interviews with technology coordinators and selected teachers detail the progress and challenges of implementing PBL units.

2.4.2 Studies conducted in India

Gadgil (1981) performed a survey concerning the expectations of primary school teachers regarding further training, orientation and continuing education. The objective of the survey was to know the expectations of the primary teachers regarding in-service training. The reasons for the lowering of the standards of primary education were also found out together with the programmes, which the teachers felt necessary to improve the standard of primary education, time and place and mode of orientation were also ascertained. Stratified random sampling was used; a survey schedule-cum-questionnaire was used to collect the information. The observation of the survey was that most of the teachers desired to have continuing education in school subjects to get mastery over them. More than fifty percent of the teachers desired to have continuing education to improve their qualifications. Fifty percent did not see any advantage in orientation programmes. Very few teachers were aware that they themselves were responsible for the unsatisfactory standard of primary education.

Butala (1987) conducted a critical inquiry into in-service educational programmes conducted by secondary teachers training colleges in Gujarat. The objectives of the study were to study the existing position of in-service

educational programmes in secondary teachers training colleges and to study usefulness of such programmes for teachers. The inquiry included the study of in-service educational programmes according to the assessments of the participants, resource personnel and coordinators. Stratified incidental sampling was used to select the sample of teachers and lecturers. The tool used was questionnaire for the teachers, resource personnel, coordinators and honorary directors. In addition to questionnaires, interview schedules for the principals and the coordinators were also used. Frequency distribution and percentages were used for analysis of data. The major findings of the study regarding different dimensions of in-service education were as follows. From 1980-85 only nine colleges conducted in-service education programmes. A majority of the teachers were not covered under any in-service programmes. The main modes employed in the programmes were lecturers, seminars and workshops. No audio-visual aids were employed, The in-service programmes concentrated mainly on school curriculum. Very few training colleges focused on areas like educational technology, administration, management and modern trends in education. The teachers were in favour of in-service programmes being organized on working days, the second preference was summer vacations. Working on weekend was their last preference. Teacher participants considered an attendance certificate to be a proper incentive for participating in programmes and this certificate should be a necessary qualification for the purpose of promotion. Most of the resource persons felt that a monetary allowance was the best incentive. Teacher participants indicated that the major achievement of in-service education was update in the teacher and content area. The second gain of these programmes was developing skills for better teaching of the subject. The teacher participants felt that the programmes were useful for special training to enable them to perform more effectively.

Bardoloi (1990) studied teacher education in Assam at Primary Level during the post-independence period with special reference to the curriculum and in-service training. The main objectives of the study were: (i) To trace the historical development of primary teacher education in Assam. (ii) To find out the major drawbacks of present curriculum. (iii) To find out the place of practice teaching in

the total programme of teacher preparation and the method of evaluating it. (iv) To analyze the problems which are faced by the trainees and teacher educators, and (v) To make suitable recommendations for solving the same. In the present study the researcher used questionnaire, interview and observation as tools. The major findings of the study shows that despite the existence of 22 training centers to train lower primary teachers, there was still a backing of untrained lower primary teachers in Assam and the quality of entrants in these institutes was not up to the mark.

Srivastava (1996) studied the DPEP teachers training programme. The major objectives of the study were: (i) To study the improvement in teaching skills as a result of training programmes. (ii) To study the problems in implementation, and (iii) To identify innovative practices, if any. The following were the tools used for data collection: questionnaire, personal interview and observation schedule. The major findings were (1) The SCERT training programme emphasized child-centered and learning-centered teaching. (2) Story-telling, poetry, songs, plays, group games, toy making, creative activities, body-control exercises, manipulation of objects and pictures were used for teaching in lower classes. (3) Dakshata sikshan package stresses on MLL competencies and their evaluation. (4) Maharashtra had a three-tier training system, viz SCERT and District Resource Group (DRG) - Block Resource Group (BRG) teachers and headmasters. (5) Training programmes in Maharashtra concentrated on: (a) competency based teaching, (b) joyful learning, (c) material development, (d) planning, (e) girls education (f) puppetry, and (g) action-research.

Aggarwal et. al (1997) evaluated the teacher training programmes, first cycle under DPEP in Hisar and Sirsa districts. The major objectives of the study were (i) TO evaluate primary teachers' training programmes, first cycle organized under DPEP in the two districts and (ii) To offer suggestion for effective training. Monitoring and evaluation performa was developed by the researcher. The major findings were (1) Training programmes at Hisar II, Hinsi I, Hinsi and Kalawali were poorly organized. Seating arrangements were inadequate; physical amenities were lacking. (2) Lecture method was mainly used by master-trainers

at Hisar, Hansi I and Hansi II. (3) Training programmes at Siwani and Dabwali were well organized. Participants were active, motivated and involved in meaningful group activities. (4) There were more than 40 participants at Hisar II, Hansi I and Hansi II centres.

Kakoty (1997) studied teacher training and motivation in the district of Darrang and Morigaon with a special reference to Sipajhar block of Morigaon district. The major objectives of the study were (i) To identify Teachers' Training Programmes (TTPs) undertaken in the study districts. (ii) To find out how effective was the role played by TTPs before and after implication of DPEP. (iii) To identify factors which influenced teachers' in executing their responsibilities towards school and society, (iv) To identify teachers' problems, and (v) To evaluate the adequacy of infrastructure for effective implementation of TTPs conducted by DPEP. For the collection of data questionnaires, interview schedule and case history technique were employed. The major findings were (1) Prior to the implementation of DPEP, functioning of teacher training institution was not upto the mark. (2) Teachers in both the blocks were found to be interested, active and motivated in participating in various short-term in-service TTPs organized by DPEP. (3) There was a low participation of female teachers owing to the fact that they were over burdened with household chores. (4) Such programmes affected the teaching learning process in single-teacher schools to a considerable extent. (5) As far as attitude of teachers was concerned, in Darrang district, female teachers attended higher mean scores in moral and social responsibility and lower scores than their male counterparts on all parameters: moral, social, teaching profession and co-curricular activities. (6) Most of the trainee teachers had little knowledge about the setup of their chosen profession and virtually no knowledge of other career opportunities for themselves.

Ramana (1997) conducted a project to know the attitude of teacher towards training. The study was based on following six objectives (i) Providing teacher generated learning activities (ii) Promoting learning by doing, discovering and experimenting (iii) Developing individual group and whole class work (iv) Providing for individual differences (v) Using the local environment (vi) Creating

an interesting classroom by displaying children's work and organizing it effectively. Questionnaires and three-point scale were used for data collection. The major findings of the study were (i) Urban and rural teachers felt that training is very useful to teachers for effective learning of child in the classroom. (ii) Male teachers had positive attitude than the female teachers about the training. (iii) Teacher Training Certificate (T.T.C) and B.Ed qualified teachers and had similar attitude about the training. (iv) More experienced teachers had the better opinion than less experienced teachers towards training.

Sunwani (1997) studied the innovative in-service teacher training practices of Agramee- a voluntary organization of Orissa. The major objectives of the study were: (i) To identify the objectives of Agramee in general and its educational objectives, in particular. (ii) To study the essential components of in-service teacher training practices being followed by the organization, and (iii) To evaluate the feasibility of its training practices as an alternative model for replication in other situations. The major findings were (1) Sharing of experience between trainers and the trainees motivated the teachers to participate in this programme. (2) The specific objective of the training i.e. capacity building of the participants, focused trainers to be more goal-oriented in their training activity in order to realize the same. (3) The training programmes tried to developed in the participants the capacity to prepared and use teaching-learning aids according to their need. (4) These programmes have helped in regenerating the human resources of the organization by using some of its students as facilitators of education. (5) They had enabled teachers to act as village level animators for better mobilization of community resources.

Dang (1998) studied external evaluation of on-going training programme for improving competencies of primary school teachers in the three Haryana districts. The major objectives of the study were: (i) To ascertain the effectiveness of the training programmes of primary school teachers organized under Tarang-1 and its impact on teachers. (ii) To assess the pre-programmes competencies and perceptions of primary teachers. (iii) To gauge the quality and quantity of resources available during the training. (iv) To asses the availability

and usability of instructional material, teaching aids, teaching methodology, camp facility and management support during training. (v) To evaluate the impact and competency improvement in knowledge, motivation and teaching ability in Shala Vikas Sankul (SVS) as a result of training to the primary teachers. (v) To develop research and development tools, educational research instruments as well as the entire programme for future planning and improvements in the training process and the instructional package on the basis of feedback received. The tools used for data collection were preliminary proforma, participant's reaction schedule, observation schedule and interview schedule. The major findings were (1) The building and infrastructure were generally not optimal and did not provide for residential facility. (2) Half of the teachers felt that the seminar room was not suitable and there was need for a separate room for group discussions. (3) Furniture was inadequate for the teachers in the seminar room. Being seated in the floor was not comfortable. (4) The black-board, chalk facility was not always adequate available. (5) Toilet facility was not adequate and water facility was also not always available. Separate toilets for female were generally provided. (6) The learning material was not supplied before the training but as most teachers said, on last day of training programme. (7) While educational audio-visual aids like overhead projector, television and video were occasionally available at the centres, they were hardly-ever used during training programmes. (8) Only two-third of the teachers spoke of having clarity about objectives of the course. (9) The objectives of the course met the training needs to a large extent. (10) Teachers found the course content fairly comprehensible. (11) Most of the teachers stated that training modules were relevant and need-based. (12) Transactional approach: While pedagogy used direct lecture method, as the programmes progressed, lecture-cum-discussion and demonstration, with field study, guided self-study and assignments were increasingly used. (13) There were appropriate master-trainers; while some were retired educational personnel, only very rare few were inappropriate or unemployed.

Dutt et. al (1998) studied issues and future projections in teacher education in Haryana. The major objectives of the study were: (i) To study the growth,

development and present status of teacher education in the state. (ii) To study structure, mechanism, management, infrastructural facilities, admission requirements, courses offered and mode of their transaction and issues related to the quality of teacher education in teacher training institutions. (iii) To identify additional inputs critically needed for improving teacher education programmes in view of emerging scenario in school education. (iv) To identify additional inputs critically needed for improving teacher education system. (v) To assist educational planners and policy makers for future planning and reconstruction of teacher education. The tools used were questionnaire and interview schedule. The major findings were (1) It seemed that the emphasis in teacher education programmes was mainly on preparation of teachers for primary and secondary education with limited attention to prepare teacher-educators and researchers. (2) Syllabus for B.Ed and M.Ed in all the 20 colleges of education affiliated in two different Universities in the state mainly Kurukshetra and Maharishi Dayanand University, Rohtak was almost identical. (3) Admission criteria for B.Ed emphasized on mental ability and general knowledge. Aptitude for teaching, knowledge of the child and subject and interest in the profession did not get weightage. (4) There was no mechanism or platform which could provide an opportunity to disseminate experiences about innovative practices and studies. (5) Only a few of the faculty members of SCERT, DIETs were involved in conducting research studies. This indicated lack of interest and competence among the academic staff. (6) Relevant materials like abstracts of studies completed were not available in the institution.

Gupta (1998) studied the learning achievement of primary teachers in relation to the in-service programme. The main purposes of the study were: to study the effectiveness of the intervention strategy designed for SOPT, to study the achievement of primary teachers before and after the intervention, to study the achievement of primary teachers in the emerging concerns of primary education before and after the intervention, to study the achievement of primary teachers in the content and transaction approaches before and after the intervention. For the present study researcher used achievement test, which was worked as Academic Awareness Questionnaire (AAQ). The AAQ consisted of multiple-

choice objective type questions. Each question contained a stem and four choices. The experts drawn from the NCERT for the face validity and content validity reviewed the AAQ. The reliability of the AAQ was determined by the test-retest method. The AAQ comprised forty test items. The findings of the study were: (1) The Special Orientation Programme for Primary School Teachers was effective. The efficacy of the Programme was established. (2) The in-service education programme -SOPT improved the achievement of Primary teachers noticeably due to intervention provided. (3) The knowledge of teachers in the emerging concerns of primary education improved significantly as demonstrated by the achievement scores. (4) The achievement of primary teachers also improved in content and transaction approaches due to the interventions provided under SOPT.

Gupta et. al (1998) studied on-line evaluation of teachers training. The major objectives of the study were: (i) To assess the quality of the *seekhnaa-sikhaanaa* training programme. (ii) To measure the responses received from the organizers, master-trainers, teachers and *gurujis*. (iii) To analyze the process of the training programmes and (iv) To collect feedback on the training programme regarding: management, classroom management, teaching and learning processes at individual and group levels, availability and utilization of training materials, making use of teaching aids with available resources, problems solving through experimentation and experimental learning and the relationship between competency, activity, concept and subject matter. Three interview schedules were developed for data collection. A check list was also prepared for observation of training programme. The major findings were (1) The participants, *gurujis* in particular, displayed a better learning attitude. (2) Teachers and *gurujis* took interest in activities and discussing their experiences. (3) The training programmes enabled participants to understand the difference between teacher-centered and child-centered learning. (4) Through the training programme, teachers understood the utility of activities while teaching primary-level students and the relationship between competency and the activities. (5) The training taught participants to produce a variety of teaching materials in order to make learning more interesting and joyful.

Institute for Development and Communication (IDC) (1998) studied the impact of training-cum-orientation programme on learning outcomes of studies in mathematics in primary school stage in Haryana. The major objectives of the study were: (i) To develop achievement tests centering around the hard spots in mathematics for summative evaluation of pupils from classes II-V. (ii) To match the content of teacher training package, the MLL, the textual material and other instructional material used by teachers in classroom situations with the test items. (iii) To assess teaching-learning process in actual classroom situation and in the context of training inputs, and (iv) To validate the in-built mechanisms and identify learners with special needs including gender sensitive-orientations and for suggesting remedial measures, as and when needed. The tools used for data collection were test, field surveys and classroom observation. The major findings were (1) Teaching by-and large in the classroom was of routine type without significant impact of training on teacher's performance and their handling of classes. Mathematics kits and other innovative techniques were not being used by the teachers in the classroom. Training, however, motivated them to prepare low-cost teaching aids. Teaching perceptions about the training was not the same as during training session. (2) Achievement levels of students in all clusters on mathematics concepts categories were not satisfactory. (3) Training effects got nearly washed out with the passage of time and student's performance could be claimed to have improved. (4) There was no evidence of carryover effect of training-cum-orientation programmes to the classroom, resulting in tremendous transmission loss from training to actual workplace in classroom situations.

Kishore (1998) studied the in-service training programme of select Primary teachers after two-week in-service course to various training components. The objectives of the study were: to expose primary teachers to equally-timed five training components through an in-service course of two-week duration, to study the preference of primary teachers for the select training areas. Thirty teachers teaching at the primary level in various Central Schools for Tibetans, were given a two-week in-service training by making use of the following five areas: (A)

Learning-by-doing (B) Communication Skills (C) Teaching Aids (D) Teaching strategies (E) Content enrichment. The time was equally divided for the five training areas. After the in-service programme was over, seventeen primary teachers were chosen randomly and were asked to rank the areas of training in the order their preferences. The following conclusions were drawn from the present study. (1) The primary teachers prefer most the learning-by-doing area for their in-service training. (2) The descending order of preference for in-service training components was as follows: learning-by-doing; teaching aids; teaching strategies; communication skills and content enrichment. (3) As compared to the content learning the primary teachers prefer training in learning-by-doing.

OM Consultants India OMCI (1998) studied the training process of training of BRC trainers and training of school teachers. The major objectives of the study were: (i) To examine and evaluate the process involved in the training of trainers and subsequently, the training of teachers at the block level. (ii) To critically observe and evaluate the processes and methods adopted during the six-day training of trainers' programmes held in April, 1997, and (iii) To evaluate the effectiveness of training by observing the processes in the training programmes, held simultaneously at 55 different block-level training centres spread over six districts during April-May in the same years. The major findings: Overall, the training programmes proved to be an outstanding success owing to the following (1) Careful selection of highly-motivated State Resource Group (SRG) members. (2) A well-designed programme of orientation to the new methods which served as a sheet anchor for the whole effort. (3) A thorough grinding of BRC trainers in the new methodology. (4) Exhaustive review sessions at the end of each day to make sure that the learning outcomes had been well understood. (5) Most of the teachers felt that the new method was feasible and they planned to adopt it.

Sinha (1998) studied the impact of in-service teacher training programme on social, emotional climate of classroom in the primary parishadiya schools of Sitapur district of UttarPradesh. The major objectives of the study were: (i) To identify those components of classroom interaction and teacher behaviour that help in building positive social-emotional climate in the classroom. (ii) To collect

classroom behavioural data to show whether or not there is difference between those teachers who had received in-service training and who had not received the same. (iii) To know whether teacher training programmes produce difference in social and emotional climate of classroom and classroom interactions, and (iv) To suggest guideline for in-service training programmes, focused on improving the social emotional climate of classrooms. The following were the tools used for data collection: observation schedule, interview schedule, sentence completion test and pictorial projective test. The major findings were (1) Impact of teacher training and other project-related treatments in Sitapur District had contributed to shift in teacher's attention to infrastructural and procedural structures. (2) Teachers seemed to be well informed about pedagogical principles of learning but attention was more on teacher's own satisfaction and classroom interaction continued to be teacher-centered. (3) Conversation was still being used only as a means of passing on information to the child or modifying his/her behaviour. Little acceptance of laughter was found while studying. (4) Classroom observation in both the districts revealed that there was greater emphasis on writing. Mostly teachers were taking more pains in ensuring that written work was complete and checked. (5) A shift in teacher's perception towards interaction among students was seen. Advantages of peer tutoring and peer learning have been realized by teachers. (6) Approach towards girl child in Sitapur was found to be more caring, encouraging and teachers were found to give special attention to them. (7) Joyful and activity-based learning was perceived by teachers as a method of teaching/learning but little evidence of its regular practice was found.

Reddy (1999) studied Teachers' Centres. The major objectives of the study were (i) To evaluate the functioning of the Teachers' Centres (TCs) in providing academic support to the teachers, (ii) To evaluate the functioning of TCs in providing feedback on the professional support for teachers, (iii) To assess the planning and management of TCs' activities, and (iv) To suggest measures for the improvement in the functioning of TCs. Observation schedule, questionnaire and interview schedule were prepared for data collection. The data was analyzed by calculating percentages. The major findings were (1) The average

attendance of teacher in TC meeting was eighty two percent and it was comparatively less in tribal areas. (2) No Resource Persons (RPs) from outside were called and demonstration lessons were given by RPs of TCs in mostly tribal and rural areas. (3) Annual plans were prepared by most of the TCs with greater weightage to demonstration lessons. (4) Prioritization of needs was not done while preparing the plans. (5) Most of the TCs did not have separate buildings and well-equipped infrastructure. (6) In a majority of the TCs, equipments like TVs, OB kits, almirahs/cupboards and materials like art materials and library books were not available. (7) There is no proper transportation network to attend TC meetings on time in most of the tribal and some of the rural TCs. (8) Half of the time in TC meeting was spent on presentation of the topic by RPs, group work and discussion on demonstration lessons. (9) Participant did not spend any time to refer books, read newsletter etc. (10) While a majority of the participants were satisfied with the academic performance of RPs in giving demonstration lessons, clarification of doubts by them, use of equipment and materials, involving the participants in activities etc, a good proportion of them were not satisfied with the techniques of RPs on initiation of discussions, conduct of group work, motivating the participants etc. (11) There was the maximum utilization of stationery, raw material and rolling blackboard in all TCs, and maps, charts, science kit, almirahs/cupboards were used in only 50% of the TCs. (12) Older teachers, politically-influenced teachers and young teachers with lethargic attitude were observed to be intentionally absent in the TC meetings. No serious action was initiated against them by the concern officer.

Rao (2003) developed an in-service training programme for Navodaya Vidhyalay teachers in meeting students emotional needs. The objectives of the study were to identify the emotional needs of students, to develop an in-service training programme for teachers of Navodaya Vidyalay in meeting students' emotional needs and to implement and study the effectiveness of developed programme. For the collection of data the investigator used participant observation, unstructured interview, questionnaire and reaction scale for feedback. It shows that teachers have hardly focused on the emotions of students in our busy ways of completing the 'abc's' of curriculum. The designed intervention did make a

difference in the teacher's behaviour as it focused on the knowledge and skills intended to bring desirable change in attitude. The teachers showed significant learning of the inputs of the intervention programme. Their behaviour changed radically with students, as they were consciously utilizing the knowledge and skills provided in the intervention programme.

Panda et al (2004) studied the perception of the lower primary teachers about science teaching at lower primary stage and their training needs. The major objectives of the study were to understand the perception of lower primary teachers about science teaching and to assess the training needs of lower primary teachers teaching science. The normative survey method was used to conduct the study. The investigators developed a questionnaire to assess the perception of lower primary teachers and their training needs for teaching science. Percentages were calculated to show the view and training needs of the respondents. The result of the study shows that majority of the respondent feels the inadequacy of basic training imparted to them to teach science topic at lower primary classes. 65% of them decried the lack of teaching aids. 82% teachers wanted specific short term training for making low cost teaching aid in science. Many of them opined that if proper atmosphere can be provided with trained teachers, scientific temper can be developed among the students and science education at lower primary stage can be meaningful and life oriented.

2.5 STUDIES RELATED TO THE WORKING OF DIETs

DIET (1992) conducted an evaluation study of the residential in-service training programme for the primary teachers at DIET Baroda. The objectives of the study were to evaluate the utility of residential in-service programme and to develop a community feeling in the teachers. It also aimed at developing the feeling of undergoing of full time activity. Increase in educational responsibility was also essential, The effect of in-service education on the quality of teaching was also found out by finding the difference in teaching, The views and suggestions of resource persons were also obtained. It was a survey in which the tools used were questionnaire and interview. The finding reflected that the programme was by the teachers and they were of the view that it may improve the quality of

teaching and help in developing community living. The residential facilities were not sufficient in in-service training programmes. It was suggested that the programmes should be of one week and not three weeks. The resource persons felt that one hour was too short a time, and that the teachers should be given agenda in advance. The library should be improved.

NIEPA (1992) undertook a study with a specific objective of identifying the strength and weakness of DIETs in Harayana. The emphasis was on identifying the strengths on which the future progress could be made by remedying the shortcoming. It was an attempt to objectively assess the implementation process. Information on establishment of DIETs and activities was collected thorough interviews based on a detailed questionnaire developed for the purpose of and visits to DIETs. Study of the relevant documents from the MHRD and state records was also undertaken. The findings of the study indicated that building, hostels and other civil works etc. needed immediate attention. The DIETs had near sufficient of inadequate space.

Lobo (1996) studied the four DIETs with special reference to the functions of the DIET. For these study investigator selected Malipuram, Kanur, Trisur and Palkkas DIETs. The main objective of his study was to study the functions of DIET and its comparison with the opinions of the trained teachers. Teachers' opinion about the different programme of DIET and the effectiveness of the programme and use of knowledge in the school situation were also focus of inquiry, For this he used rating scale, questionnaire and interview as tools. 240 trained teachers who had attended training programmes at the four DIETs were selected as the sample. The finding shows that for the different works opinions of the teachers differ. According to DIET Guideline more facilities were seen in the Mallpuram DIET than the Kanur DIET. There was no significant difference in the opinions of the male teachers and female teachers. The teachers opinions showed that the practical branch of the DIET was weak in their work, the reason might be the less availability of infrastructure facilities or the less use of the available facilities, The teachers paid less attention during training programmes and evinced negative attitude towards MLLs training.

Shajoin (1996) studied the training modalities of four DIET centers of Kerala and its impact on the primary school teachers. The major objectives of the study were: (i) To find out the scores of the reaction of DIET trained teachers from the four DIET centers of Kerala towards programme and to compare them. (ii) To find whether there was a difference between, (a) Male and Female teacher's reactions; (b) Urban and Rural DIET trained teacher's reactions, towards the DIET programme. (iii) To assess the impact of the DIET training primary on developing teacher effectiveness. (iv) To determine whether the types of schools from where the teachers selected had any impact on their reaction scores towards the DIET programme. The study was a descriptive survey. Random sampling method was used for selection of sample. Two tools were used for the study, namely, a rating scale to measure the reaction towards the DIET programme and teacher effectiveness scale. The major findings of the study were: (i) Among the four DIET centers, the Malappuram DIET center had the highest mean score, while the Kannur DIET center had the lowest mean scores. (ii) There was a significant difference between the Male and Female DIET trained teachers reaction toward DIET programme. The mean scores of the Female DIET trained teachers were higher than the Male trained teachers. (iii) There was no significant difference between the Urban and Rural DIET trained teachers' reaction as well as the Aided and Government school-teacher's reactions towards DIET programme. (iv) The reaction of the DIET trained teachers towards the DIET programmes was independent of the type of the programme attended by them. (v) Ninety nine percent of the teachers participated in the study appreciated the various programmes conducted by the DIET. (vi) The teachers felt that the programme had helped them to acquire the necessary knowledge regarding the content and methodology of teaching different subjects.

Gafoor et al (1998) studied the availability and utility of physical facilities of DIETs. The study was conducted to know the existing physical infrastructure of DIETs and availability and utility of the library facilities, laboratory facilities, computer facilities and audio-visual facilities. The study was carried out by a very

elaborate questionnaire on a sample of seven northern DIETs of Kerala. The obtained data were analyzed mainly with the percentage analysis and qualitative analysis. The major findings were (i) Regarding the physical facilities, among the three DPEP DIETs only one DIET has more than the required ten acres of land, among the four non-DPEP DIETs, two DIETs have more than ten acres of land. (ii) All DIETs have required one general library. (iii) In accordance with the Guidelines (1989) DIETs should have five laboratories, but all DIETs have only one laboratory each. (iv) Each DIET is expected to have one computer room. But it is only available in Kozhikode and Palakkad DIETs. (v) Suggestion of Guideline for having an audio-visual room in each DIET is only satisfied by the Palakkad and Thrissur DIETs.

Mehta (1998) evaluated in-service teacher training. The major objectives of the study were: (i) To obtain feedback about the usefulness of the in-service teacher training programmes planned and organized by SCERT and conducted by DIETs, and (ii) To ascertain its impact on classroom teaching in primary school. Observation and direct interview schedules were designed to collect data. The major findings were (1) 39% of teachers felt that the in-service training developed skills to use new teaching methods for Hindi; 55% of teachers opined that training aimed to make teaching-learning interesting for children, while 22% said that it aimed to improve pronunciation of Hindi words/language. (2) The perception about transmission loss due to Cascade III model was between 50-60%. The course was of six days duration and made use of training package developed by SCERT. (3) Teachers trained were provided with a package each, which was to be used by them after the training in their schools for reference purpose. 48% teachers were frequently, 42% teachers were using it package sometimes, while 10% used it rarely. (4) The study highlighted certain qualities of Master Trainers, such as: should have good command on the subject (64%) should be good speakers etc. (5) 80% teachers felt that all master trainers were good. (6) Six of 17 official felt that more than 75% of teachers took interest in the training while eight respondents felt that 50-75% of teachers took interest in the training. (7) The duration of the training was six days. 46% of teachers had opined that the duration was adequate, while 54% felt it was inadequate. Most of

the teachers felt that the training should be longer of 8-10 days. (8) Despite higher emphasis on new teaching methods during training, use of new teaching methods was observed to be quite low. Teachers continue to use traditional lecture method (77% of classes), self reading (14%) and you-read methods (11%). Among new teaching methods, group learning method was used in 21% of classes, followed by activity based teaching (11%), competency based learning (6%), child-centered approach (3%), and play-way method (3%). (9) Blackboard was used only in 44% of classes observed. 21% of teachers had used blackboard extensively, while, 23% had used it to write a few difficult words. The overall quality of teaching was good in 56% of classes, while, it was average in 36% of classes. The quality of teaching was observed to be poor in 8% of classes. Pronunciation was rated good for 42% of the teachers and satisfactory for the rest 58%. (10) 61% teachers felt that in-service teachers training had helped increasing their knowledge of Hindi language. 58% felt that training helped in improving their knowledge about new teaching methods. Awareness of new teaching methods such as group-interaction and play-way methods and activity based teaching was high among teachers (over 80%) but their preference for actually using these methods in their classes was low (below 50%).

Patra (1998) studied the impact of special orientation of primary teacher on development of awareness and teaching competence in teachers of primary schools. The major objectives of the study were: (i) To assess the effectiveness of SOPT in realizing its objectives. (ii) To ascertain the modalities of implementation of SOPT in the district of Dhenkanal. (iii) To study the relation between classrooms teaching process and quality of training acquired. (iv) To ascertain the degree of academic input received by the teachers after SOPT programme. (v) To identify further needs of primary school teachers, and (vi) To know the strength and weakness of SOPT programme conducted at the block level. Questionnaire, classroom observation and interview schedule were prepared for data collection. The major findings were (1) The use of operation blackboard material, audio-visual aids, field study, distribution of the training package, duration of training and deputation of teachers in time were not found

to be satisfactory. (2) Teachers felt that the SOPT programme did not help them in the acquisition of content knowledge, MLL approach in teaching, technique of continues comprehensive evaluation, handling of operation blackboard materials and teaching in multi-grade class. (3) Performance of the resource persons and course directors was found to be satisfactory in SOPT programmes. (4) Physical amenities were appropriate expect for toilet facilities.

Mehta (1999) made critical study of working of DIET in Gujarat. The objectives of the study were, to study the training programmes and other programmes with special reference to the DIETs of Gujarat State, to study to opinions of teaches regarding the training programmes, to study the opinions of the resource persons regarding the training programmes, to study the opinions of the lecturers of the regarding the working of DIET, to study the infrastructure facilities of the DIETs of the Gujarat state, to study the difficulties in administrations of the DIET. For the collection of the data researcher made three questionnaires for teacher's, lecturers and for the resource persons. The major findings of the study were (1) According to guideline the infrastructure facilities should be increased. (2) Most of the teachers believed that training programmes are useful for them. (3) Due to more training programmes less attention was paid on the preparation of the programmes by the lecturers of DIET.

Yadav (1999) studied quality of primary teachers in-service training. The specific objectives of the study were (i) To assess the adequacy of various training input measures. (ii) To identify problems affecting the quality of training. (iii) To ascertain participants' perceptions about the quality of training. (iv) To determine the quality of training in terms of gain in knowledge among the participants. Out of four DPEP district in Harayana one district Hissar was selected on the basis of easy accessibility to the venue of the training. From Hissar district, two blocks namely BRC-1 and 11, were selected and all the 127 teachers who participated in the training programme. Participants' perception scale, focus group discussion, interview schedule for resource persons and achievement test were developed as instruments for data collection. The major findings of the study were: (i) About fifty percent teachers expressed the view that the seminar room

was not suitable and no separate rooms for group work. They also expressed that there was not adequate facilities of infrastructure, especially blackboard facility, toilet facility, and library facility. (ii) Learning material was provided on the first day of training and no technological aids were used for transacting the curriculum. (iii) About the course content around seventy percent teachers expressed their views that they had clarity about the objectives up to extent, course content met the training needs comprehensible to some extent. (iv) The participating teachers stated that lecture method was mostly used in the training programme (98.4). This was followed by lecture cum discussion (47.4). Demonstration, field study, guided self study and assignment were never used. (v) The teachers felt that the same resource person should not deal with modules related to different subjects. Competent resource persons should be employed during training programmes.

Swaminathan et. al (2002) conducted a study on the staff development programme for BRCs personnel in Pudukkattai DIET. The major objective of the study was to find out the reaction of the BRCs supervisors and teacher educators in terms of (i) The objectives of the programme (ii) Allotment of time to theory and practical sessions with reference to the handling of instruments, viz., radio/cassette recorder, Over Head Projector (O.H.P) and Television (T.V)/ Video Cassette Recorder (VCR), (iii) The language and speed of the presenters (iv) Interaction of participants (v) Infrastructure facilities at the training Center. The tools used for the data collection were an Evaluation Performa and a question paper. The sample was selected as population as sample. The major findings were (i) All the participants unanimously responded that the objectives of the programme meant for capacity building of BRC personnel were clear and the programme met the objectives. (ii) Asked whether the participants understood the handling of a Radio/Cassette recorder, O.H.P, TV/VCR and whether they understood the method of using the same in the class, all of them unanimously answered positively. They no problem in using the instruments in the class, they have only problem in the mechanical part. (iii) They were able to understand the language of the presenters and the speed of the presenters was moderate. (iv) A large majority of the participants (87%) expressed that their

queries were answered then and there. (v) All the participants pointed out that the seating arrangement was convenient, there was enough light in the room, there was no external noise disturbing the programme, and there was enough ventilation in the class.

Duggal (2005) studied the arrangement for in-service education of the assistant teachers at DIETs. The major focus of the study was three week orientation programme on the one hand is organized with the aim of making the assistant teachers aware of the nuisance of schools practices the idio-syncrasies of a subject are dealt with in the one week theme-based programmes. The major findings of the study were: (1) The target group i.e. the number of assistant teachers to be trained in-service, was quite large, (2) Most of the assistant teachers stated that the intimation about the schedule of the in-service training programmes was not provided to them well in advance due to poor co-ordination among the coordinators of these programmes, and the managements of schools. (3) Majority of teachers and resource persons told that the guidelines for the organization of in-service training programmes and their monitoring were not followed by the co-coordinators of in-service training programmes in terms of assessment and prioritization of the training needs, selection of resource persons etc. which in turn, demotivated the teachers to participate in in-service training programmes.

2.6 RESEARCH GAPS

In the present study the investigator reviewed fifty studies. The reviews were from the 1981 to 2005, generally greater focus was on in-service teacher education and professional development programmes and its effects on students. These studies were conducted at different levels namely eighteen studies were on project level, thirty one studies were on Doctor of Philosophy (Ph.D) level, while one studies was conducted at M.Ed. level. Investigator reviewed twenty studies conducted abroad and thirty studies conducted in India, out of these thirty studies nineteen were related to in-service training programmes conducted by different institutions; while eleven focused on different aspects of DIETs.

The studies conducted abroad were generally deals with different aspects of professional development programmes. Heaton (1981), Starkweather (2001) and Castenda (2002) studied the teacher training and its effects on students. Heaton (1981) reported that no significant difference was found between treatment group in student; while Starkweather (2001) and Castenda (2002) reported that teachers perceived the professional development programme could be most effective for improving their teaching practice and student learning. Blunck (1993), Long (1999), Franks (2000), Aeschlimann (2001), Ray (2001) and Oberlander (2002) studied the effectiveness of professional development programmes, from these studies it was concluded that teachers' confidence improves significantly when a teacher was involved in the programmes for longer duration (Blunck, 1993 and Aeschlimann,2001) and training helped them to become a better teachers and provided opportunities for growth (Long, 1999 and Ray, 2001).

Researches conducted in India show that investigator reviewed nineteen studies conducted related to in-service education of different level; while other eleven studies were conducted on different aspects of DIETs. Regarding the in-service training programmes Gadgil (1981), Butala (1987), Gupta (1998), Rao (2003) Aggarwal (1997) were concluded in their studies that in-service training programmes were useful to perform more effectively and makes a difference in teachers' behaviour and most of teacher desire to have continuing education in school subjects to get mastery over them.

Bardolol (1990) found that there was still a backing of untrained lower primary teachers and quality of entrants in these institutes was not up to the mark. Panda et el (2004) in his study showed that respondent feels the inadequacy of basic training imparted to them to teach science topic at lower primary classes and sixty five percent of them decried the lack of teaching aids; while eighty two teachers wanted specific short term training for making low cost teaching aids in science. This result showed that training programmes were not going on properly in few institutes and more attention was needed to improve the quality of in-service training programmes. Studies related to working of DIETs reveal that more attention was needed on working of DIETs. Most of the studies concluded at with drawbacks in organization of in-service training programmes. Regarding

the infrastructure facilities DIET(1992), NIEPA(1992), Mehta(1999), Yadav(1999) reported that building, hostels, blackboard, toilet, library and other civil works needed DIETs to immediate attention; while Lobo(1906) reported that practical branch of DIET was weak in their work, the reason might be less availability of infrastructure facilities or the less use of the available facilities. The study also indicated teachers paid less attention during in-service training programmes and evinced negative attitude towards MLLs training. Yadav (1999) concluded in his study that some resource persons were dealing with modules related to different subjects and teachers felt that more competent resource persons should be employed during in-service training programmes; while regarding teaching method of resource persons, mostly lecture method was used in in-service training programmes and this was followed by lecture cum discussion and teachers also felt that no technological aids were used for transacting the curriculum. Mehta (1999) reported that due to more in-service training programmes less attention was paid on the preparation of the in-service training programmes by the lecturers of DIET. Duggal (2005) indicated in his study that monitoring was not followed by the co-ordinators of in-service training programmes in terms of assessment and prioritization of training needs, selection of resource persons etc. which in turn, demotivated the teachers to participate in in-service training programmes. While looking into the methodology of the studies investigator used interview, questionnaire and observation as a data collection tools, while others were used different scale, achievement test, question paper, survey and examination of existing documents.

From the above discussion, it can be concluded that there is need to develop the capacities of these institutes conducting more researchers with a view to providing feedback for improving the quality of education. Research components still continue to be the weakest area of operation. Many research and evaluation studies on the functioning and operationalisation particularly on DIETs supported this view (NCERT 2000, NIEPA 2001, and Yadav 2000).