Chapter-2

REVIEW OF RELATED LITERATURE
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Review of the literature is an important pre requisite of actual planning and then execution of any research work. It helps the researcher to gain insight into the problem, to keep abreast of the work already done on the subject, to acquaint himself of the procedure adopted to explore the field, to avoid the pit falls of the past researchers and the unnecessary repetition of what was already been carried out. It also provides guidelines for formulation of hypothesis on the basis of trends of results of previous studies and a perspective for interpreting the results.

The present chapter includes the review of the related studies, in respect of the case based pedagogy and its impact on teachers’ classroom behaviour and student learning so as to identify their research trends. The chapter also includes studies related to gender differences and teachers’ classroom behaviour.

2.1 CASE BASED PEDAGOGY AND TEACHERS’ CLASSROOM BEHAVIOUR.

With the best of efforts, the researcher could not lay his hands on many studies which are concerned directly in examining the effect of case based pedagogy on teachers’ classroom behaviour or teaching effectiveness. The review indicates that not much work has been done in the area of case based pedagogy in teacher education before 1980. It is only since late eighties and early nineties that case based pedagogy had gained the systematic attention of researches as tools for pre-service teacher preparation.

Use of case based method in certain other disciplines has its roots long back. In the light of challenges the professional schools faced for how to prepare students for the world of practice, the law school led the way in 1870 by starting teaching with cases and thereby reversing a long history of lecture and drill. Use of case method in school of management and business studies followed it fifty years
later in around 1920. It was recognized that these cases would have to be different from legal cases. By 1922, casebooks had been adopted by 85 institutions. Harvard faculty members helped the dissemination process by publishing books on the case method in 1931, 1953, 1954, 1961, 1981 and 1991. Offering seminars and case discussion served their distinct roles: first they helped students develop diagnostic skill in a world where materials and technologies are constantly changing, secondly case discussion helped students develop persuasive skills and thirdly perhaps most importantly, it developed ways of thinking and acting among the users.

Many medical schools began using cases in 1985. They were designed to cement students understanding of basic science by linking it immediately to practical problems—typically the case history of individual patient. This led to the foundation of voluntary “New Pathway” curriculum that shifted students’ pre-clinical years away from lecture toward tutorials and active learning. The superiority of this approach is not yet fully documented. Garvin (2003) concluded that studies comparing the performance of the pilot group of “New Pathway” students who were randomly selected and could thus be compared scientifically with their traditionally taught peers—found comparable scores on board certification tests. There were no significant differences in biomedical knowledge, but certainly New Pathway graduates reported to be more committed to careers in primary care and psychiatry, more comfortable inter-personally, more competent in dealing with psychological issues and more likely to display humanistic attitudes. Studies of problem based learning at other medical schools have even shown some fall-off in performance on basic science examinations, despite high levels of student and faculty satisfaction and equal or better performance on clinical examinations.

Case method was also being used in teaching of mathematics, educational psychology, and engineering, but there is not much empirical evidence to report its superiority. However, researches have been conducted to study the effect of
this method on development of teachers’ analytical, critical thinking, problem solving skills etc.


Shulman (1992), while discussing contribution of case method in teacher thinking, contends that the power of cases rests in the content of the case and not in whether it is lectured about discussed or simply read. However, others argued that key to the case method is in the discussion process itself (Christensen 1987; Welty 1989; Merseth 1991; Richardson, 1991). In the opinion of Wassermann (1994), the effectiveness of case method relies on the quality of the case for generating student interest and presenting the issue, and the skill of the instructor to facilitate and debrief class discussion. Allen (1994) suggests that the amount of content learned is not diminished through the case study method. Case based teaching and discussion can lead to clearer, more elaborate understanding of issues by beginning teachers (Levin 1993).

Kleinfeld (1991) helped her students write and publish several long cases dealing with some of the problems peculiar to teaching in rural Alaska, and she made use of these in her teacher education classes. Her research indicates that student teachers enjoy the case method and that this method produces an advantage over traditional instruction in developing analytic and problem solving skills.
Some researchers have developed collection of cases and used them in practice for studying the processes. Silverman, Welty, Lyon, and their colleagues (1991) have established the Center for Case Studies in Teacher Education at Pace University in New York. Their researches show that about 1/4 of students take to the case method naturally and thrive in it, 1/3 to ½ gradually grow into it, and ¼ remain uncomfortable with it but come away with greater awareness with their own weakness in analysis and problem solving.

Wright (1992) and his colleague prepared a case and used it successfully with an intent to have students link their theoretical knowledge of effective teaching literature discussed in the class, (including planning, management organization and teacher expectations) with the reality of this particular teaching situation depicted in the case. The student involved in this case analysis was in a second year method course. The case was discussed in the presence of investigator. He found the increase of theoretical knowledge of effective teaching through case discussion in the presence of investigator in the principles of withitness, overlapping and monitoring involved in classroom management.

In a study of more than 200 graduates of a single teacher education programme, Ferguson and Womack (1993) examined the influence of it on 13 dimensions of teaching performance of education and subject matter course work in respect of NTE subject matter test scores, and GPA in student major. They found that the amount of education coursework completed by teachers by this method explained more than four times the variance in teacher performance (16.5%) than did measure of content knowledge (NTE scores and GPA in the major), which explained less than 4 percent.

Bliss and Mazur (1994) integrated their hardcopy cases into core curriculum. Among them three cases were about controversial issues concerning teacher ethics and curriculum selection. Two were those of accomplished teachers whose pedagogy is illustrative of selected state performance standards and two were from common thread project. 27 students preparing for career as secondary
teachers in different school subjects constituted the sample for their study. When comparing case method with other methods such as lecture, cooperative learning and discussion, ten students reported that they liked it better or much better than other methods. Three students said they found cases useful and the approach should be used in education with other methods. Ten described it as quite valuable without stating preference compared with other methods three descriptors that appeared most often were realistic (7), engaging (5) and relevant (5). Further they were asked as to what do they consider in respect of the benefits and limitations of this approach when used with master level students? Seven responses conveyed the idea that case promoted confidence and clarity by providing an opportunity to formulate belief and/or anticipate actions; four responses focussed on cases as vehicles for learning to think critically. In addition to these general responses about case methodology, students also showed unusual recall about key issues depicted in the case. For example, four months after a case was discussed the majority of students described the essential components of teachers’ high expectations for her students.

Cases are being integrated into new editions of educational psychology texts (Sudzina 1995). Cognitive theories suggest that cases might help to develop teachers, who are "reflective practitioners". Analysis of data suggested an affirmative answer to question on “do students in case study classes learn the same amount of content as students in more traditionally taught educational psychology classes?” However, mixed results were obtained regarding the research question on “how effective are case studies as a pedagogical method in helping students in educational psychology course to become more reflective regarding the role of teachers in classrooms?”

Some of the available research on case methods is based on teachers written analysis of cases wherein discussions were not directly a factor in these analyses (e.g. Harrington, 1994). In all instances, what counts is not only the content and the structure of the case itself but also the way in which it is discussed and how it is discussed. “It matters both what is discussed and how it is discussed”
Since discussions are central to the value of the case studies in teaching and learning, this raises the issue of the facilitator’s role and the ways in which he or she can productively steer the discussions. Within the literature most reflections on the role of ‘discussion leader’ highlight the tension between the facilitator’s ‘agenda’ and his or her ability to remain open to strands of discussion that emerge from the group itself (Barnett & Tyson, 1994; Wasserman, 1994; Merseth, 1996).

Levin (1995) compared the teachers’ understanding by learning through cases without discussion and their learning with case discussion method. Twenty-four elementary grade teachers, current students and graduates of the Developmental Teacher Education (DTE) programme at the University- Berkeley constituted the sample of the study. He concluded that for very experienced teachers, discussion seemed to be a catalyst for reflection and promoted meta cognition. For the less experienced teachers and student teachers (pre service teachers) the discussion allowed them to clarify and / or elaborate their thinking about particular issue in the case. On the other hand only reading & writing about a case appeared to provide little stimulus for teachers to elaborate their understanding or increase their perspective on the issue in the case. This was especially true for the less experienced and student teacher. Furthermore without the opportunity to interact with other teachers and discuss the case, teacher in control group just reiterated their original thinking about the case, solidifying and reinforcing their responses, rather than gaining any new perspective. The social interaction during the discussion of a case appeared to be the source of changes in teachers thinking who participated in the discussion. It appears that teacher can also learn from a case discussion in which they are relatively more a listener than a talker, provided that ideas are raised that may eventually be a catalyst for internal cognitive conflicts.

Harrington (1995) of Michigan University studied if dilemma based cases could be used to gain insight into one aspect of student’s development of their reasoning. Students were asked to identify and discuss in their written case.
analysis the issues in the case; how they would prioritize the issues based on that, and different perspectives of the issues. Findings suggested that the developmental nature of learning to teach is reflected in student’s analyses of events embedded in cases and that case based pedagogy provides opportunities to further encourage the development of professional reasoning in prospective teachers.

Silverman and Welty (1996) "lessons learnt from FIPSE Projects III- June 1996 the work at Pace" was a joint effort of members of the business and education faculties. Cases were gathered from teachers, were revised/ written to provide detail, clarity and definition and tested again. The second paper, “Using Case Method to Link Theory and Practice into Educational Psychology Courses,” was written with Judith Kaufman of Oklahoma State University. Students of two classes were taught, one with case – based, and other with lecture- based pedagogy. Same case was analyzed in writing at the beginning and the end of a course. Using content analysis the authors looked for evidence of students ability to link theory with practice. They found significant evidence that students in the case- based class could apply theory to teaching situations, many more readily than their peers in a lecture-based educational psychology course. The case-trained students had a better understanding of the meaning and application of educational psychology theory at the end of their course. It is important to note that all students in the case based class were able to use applicable theory, while only half of those in the lecture- based class were able. Case based class students had learned how to analyze teaching situations by taking other perspectives, identifying a range of problems and offering and evaluating a variety of possible solutions. Furthermore, these students recognized that such an approach enabled their learning about teaching to continue outside of the teacher education classroom.

Rupert (1996) carried out a study with 20 prospective teachers using case method pedagogy. The finding of the study showed that case analysis carried the student teachers in to the affective realm and created an interest in, an
understanding of and a commitment to substantive educational issues. Students used concepts and theories and introduced these to analyse problem arising from practice. Through the thinking based case method, student teachers learned to look at their circumstances in a reasonable cautious and calm manner. Although cases acted as an impetus for reflective thinking, the student teachers showed rare or irregular use of reflective abilities.

WestEd’s (1997) studied the improvements in case content knowledge and beliefs about teaching and classroom practices. Data gathered in individual interviews with 20 teachers suggested that after participating in case discussion, their behaviour in the classroom and their beliefs about teaching had begun to conform more closely to those recommended in Reform Documents.

A review of instructional methodologies and result from an ongoing project conducted by Raju and Shankar (1999) show that the case study method of instruction is the most suitable for enhancing active learning techniques in engineering classrooms. The authors have developed engineering case studies along with background competency material, instructional manuals, videos, and CD-ROM in partnership with industries (Raju and Shankar, 1998; Sankar, Raju, and Kler, 1999; Hicks, Sankar, and Raju, 1999). These instructional materials were tested in engineering classes at Auburn University. The feedback from the students was very positive and result showed that in addition to integrating theory and practice, the students perceived an improvement in analyzing alternatives, making decisions and defining them.

Arcavi (2003) experimented with his role as facilitator by limiting himself to posing a family of questions, many of which promoted the group to conjecture what belief and goal might have motivated the case teacher to act as he did. From the findings he concluded that in a case study, student must spend some time studying independently, and learn to work both individually or as part of team/group. What the teacher should give them is guidance and encouragement, not an absolute direction. In traditional lectures, students do not spend much
time studying independently, but rather listening to lecture and taking notes. Out of the lecture, students only complete assignments. At the end of the semester, students simply reproduce what they have learned in examination papers. Consequently, case study method of teaching can improve student interests in actively learning the knowledge required by the case study and facilitate their deeper understanding of the relevant concepts.

Greene, Bronack, Zimmerman and Tashnerj (2003) investigated a pilot project in a College of Education using web-based instruction to investigate student receptiveness for developing teachers abilities to connect theoretical knowledge learned in classrooms with real-life teaching and learning. Cases were selected based on relevance to course goals, realism and the quality of the issue represented. Students reported that the cases helped them tie theoretical knowledge to practical situations and provided a realistic foundation from which to begin exploration of deeper issues.

Though many studies on relationship between case based pedagogy and teacher behaviour could not be found, there is substantial evidence of the effects of certain other techniques of training for teaching behaviour on modifying classroom behaviour of the teacher. These studies also are being reviewed for their indirect bearing on the problem of the present study. Hough and Obar 1965, Edward Exher (1969), Quarashi and Lulla (1970), Jangira (1972), Joglekar (1981), Denton and Lacina (1984), Brown, Smith & Stein (1985) Guyton and Farokhi (1987), Wiley and Yoon (1995), Cohen and Hill (1997), and found a lot of evidence both the kind and extent of professional development mattered for teaching practice and student achievement.

Hough and Ober (1965) conducted a study to ascertain the effect of training in interaction analysis on the verbal teaching behaviour of pre-service teachers. It aimed at testing the efficiency of (a) three methods of teaching human relation skills and (b) two methods of teaching pre-service teachers to analyse and control their verbal teacher behaviour. Verbal teaching behaviours used by
subjects during simulated teaching were measured by trained observers using a 13-category modification of FIAS. The relative openness or closeness of a person’s belief-disbelief system is related to a person’s ability to receive, evaluate and act on relevant information received outside on its own intrinsic merit judiciously. It was measured by form E of the Dogmatism scale developed by Ropeach (1960). This study employed five treatment groups of eighty-four subjects each, having a separate instructor for each. Also treatment types were randomly assigned to classes. The following findings were reported. Significant F ratios were obtained in 9 of 13 analyses. Which showed clearly that treatment groups differed significantly with relation to their use of verbal behaviour related to (a) praise and encouragement, (b) acceptance and clarification of student ideas, (c) questions (d) answer to student questions, direction and commands, (f) criticisms.

Simon and others (1966) reported that student teachers trained by interaction analysis tend to be more accepting, have more student initiated talk, are less directive, less critical, have more extended student initiated talk with less silence and confusion than the student teachers trained in learning theory alone. When both student teachers and co-operating teachers know interaction analysis, the students have maximum opportunity to develop their own styles of teaching and appear to increase individuality in teacher behaviour.

Exher (1969) studied the effect of instruction in interaction analysis upon selected verbal teaching behaviour on a sample of sixty eight undergraduate elementary mathematics students. One-third of the sampled students constituted each of the two experimental and one control group. A modified category system of interaction analysis, emphasizing types of teacher questions, was used to instruct the two experimental groups in interaction analysis. Audio tapes were analysed to give awareness of their own teaching behaviour for the experimental groups. Analysis of variance and Duncan’s Range test were used to test the significance of change, the major findings revealed that :- (i) Instruction in interaction analysis was an effective agent in bringing out change in the verbal
teaching behaviour of elementary mathematics method students, (ii) Instruction in interaction analysis did not affect the verbal teaching behaviour of elementary mathematics method students in terms of either indirect or direct teaching influence or specific type of questions asked, and the amount of student talk elicited from students, (iii) Instruction in interaction analysis did affect the verbal teaching behaviour in terms of type of student responses.

Jangira (1972) investigated the relationship of classroom behaviour training of teachers with some selected measures of pupils as criteria of teacher effectiveness. As many as 20 student-teachers and 396 pupil formed the sample. Ten student teachers of experimental group received class-room behaviour training. Following a pretest, posttest design, a 2 x 2 covariance analysis technique was employed. Results revealed that the training in classroom behaviour did change the pattern of interaction in the class. Those student teachers who were trained in classroom behaviour scored significantly higher on classroom interaction variables.

Joglekar (1981), tried to identify the patterns of the classroom behaviour of some selected science teachers on the basis of Flanders Interaction Analysis Category System. They also compared the patterns of the classroom behaviour of male science teachers with that of female science teachers and came to the conclusion that mostly the teachers’ classroom behaviour was direct. In general, male teachers did not differ from female teachers as regard to their classroom behaviour. While Training Programme had positive effect on the classroom behaviour of teachers, experience in teaching had no special effect on the pattern of influence of teachers in the classroom. They also found that teachers teaching chemistry had more pupils talk, high I/D ratio, more questions and rapid transition in the class than in the case of teachers teaching biology and physics.

Denton and Lacina (1984) found positive relationship between the extent of teachers’ professional education coursework and their teaching performance, including their students’ achievement.
Guyton and Farokhi (1987) compared relative influence of different kinds of knowledge on 12 dimensions of teacher performance on more than 270 subjects and found that there existed a consistent strong, positive relationship between teacher education coursework performance and teacher performance in the classroom as measured through a standardized observation instrument.

The kind and quality of in-service professional development as well as pre-service education may make a difference in developing knowledge of teaching strategies. Several studies have found that higher levels of student achievement are associated with mathematics teachers’ opportunities to participate in sustained professional development grounded in pedagogy linked to the new curriculum they are learning to teach; (Wiley & Yoon, 1995; Brown, Smith, & Stein, 1995, Cohen & Hill, 1997). In these studies, both the kind and extent of professional development mattered for teaching practice and for student achievement.

Kerr, Ildiko; and Berliner (2002) compared the academic achievements of students taught by under-certified primary school teachers, including teachers from the "Teach for America" program, to those of students taught by regularly certified teachers. Findings for 5 school districts, roughly 300 new teachers, show that students of under-certified teachers make about 20% less academic growth than do students of regularly certified teachers. (SLD)

On the basis of the results of the studies reviewed in this section, following trends are discernible:

(i) Case method produces an advantage over traditional method in developing analytic and problem solving skills and leads to clearer and more elaborate understanding of issues.

(ii) Ideas raised during the case discussion act as catalyst for internal cognition conflicts.
(iii) Case based pedagogy helps in linking theoretical knowledge of effective teaching with reality in teaching situations.

(iv) Case method of teaching improves students’ interest in active learning, in analyzing alternatives, in making decisions and in defining them.

(v) Case method is useful for producing teachers who will be problem solvers and reflective practitioners.

2.2 CASE BASED PEDAGOGY AND STUDENT LEARNING

The researcher could not lay his hands on any study where the impact of case based pedagogy used for training of teachers had been studied on their students’ learning. Therefore, the studies relating to student learning with other similar teaching strategies and practices used for training of teachers (which have only indirect bearing) by bringing improvement in teacher behaviour and thereby on student learning are being summarily reviewed here:

Since the advent of structured empirical research on teaching in the 1950s there has been a consistent interest in the way teachers affect the achievement of students. Research in the 1950 and 1960s was generally experimental and was often carried out in laboratories as it was assumed that there was a straightforward relationship between teaching and learning, and that through this research, a science of teaching could be identified. As a consequence of the equivocality of these research results, researchers interested in how teacher behaviour affected student achievement began from the 1970s onward to gather data by observing and coding classroom activities.

A growing body of research suggests that schools can make a difference in student learning and a substantial portion of the difference is attributable to teachers. Studies of teachers’ influence at the classroom level using the Tennessee Value-Added Assessment system and a similar data base in Dallas, Texas, have revealed that differential teacher effectiveness is a strong determinant of differences in student learning, far outweighing the effects of differences in class size and heterogeneity (Sanders & Rivers, 1996; Wright,
Horn, & Sanders, 1997; Jordan, Mendro, & Weerasinghe, 1997). Students who are assigned to several ineffective teachers in a row have significantly lower gains in achievement than those who are assigned to several highly effective teachers in sequence (Sanders & Rivers, 1996).

Saxena (1975) conducted a comparative study of verbal teaching behaviour patterns and students achievement at knowledge, understanding and application level. He reported significant differences between the behaviour patterns and achievement scores of pupils of programmed and non-programmed teachers.

Roka (1976) experimented with nine in-service science teachers to find out the effect of certain verbal teaching behaviour patterns on the pupil achievement level. Likewise Padma (1976) also attempted to find out the effect of different teaching patterns on cognitive attainment. Brophy (1979) studied the relationship between teacher behaviours and student achievement. Teaching methods shown to promote achievement included (1) direct instruction, (2) brisk instructional pacing, (3) frequent feedback and reinforcement, and (4) high expectations.

Good and Grouws (1979) reported the results of a study in which 40 teachers received instruction in effective teaching practices, then implemented these with their students. Trained teachers' students outperformed control teachers' students. The main features of the training programme in which teachers received training was monitoring. It included daily review, checking daily seatwork, checking homework and weekly and monthly reviews.

Fisher (1981) observed positive relationship between teaching behaviour and monitoring of student achievement. He also investigated the relationship of teaching behaviours to academic learning time (the amount of time a student spends in an academic task that he/she can perform with high success) and student achievement. Monitoring was found to be positively related to both academic learning time and achievement.
Pandey (1981) revealed that accepting ideas and praising had significant positive
effect on concept attainment at different levels. Teacher questioning had
significant positive effect on classificatory and formal level of concept
attainment.

Kumar (1982) investigated the questioning patterns of social studies and
sciences teachers in the English medium schools. The major objectives of the
investigations were (i) to analyse the classroom questioning behaviour of social
studies and science teachers and (ii) to study the kinds of questions used by
teachers in classroom teaching. It was found that the teacher dominated the
classroom interaction and about 71.77% of the total time was used by the teacher
talk. Questioning formed only 6.09% of the time. The response decreased with
an increase in the level of complexity of questions. The questioning behaviour of
social studies and science teachers also differed significantly. Science teachers
used questioning, translation, interpretation, application and higher order
questions to a greater extent than social studies teachers. It was also found that
the increase in the use of questioning increased student’s response and initiation.

Brophy and Good (1986) reviewed the results of 204 studies and showed that
there was a positive correlation between teacher led instruction and student
achievement, and a negative correlation when the students were engaged in
individual work without direct teacher supervision. Moreover, the way teacher
structures the lessons and communicates with students has a considerable effect
on student achievement. Student achievement is maximized when teachers
carefully structure activities so that students are presented with features such as
advance organisers, links, overviews, outlines and reviews; repeat main points
regularly; his questioning and presentation styles are characterised by clarity and
match the level of questioning with the activity.

Sharma (1986) studied the effect of teacher behaviour on student achievement in
relation to cognitive styles and achievement motivation. One of his findings was
teacher behaviour significantly affected the achievement of students.
Fuchs (1986) reported findings from a meta-analysis on the effects of close monitoring of the learning of mildly handicapped students. Those programmes which were systematically monitored and developed formatively achieved an average of .7 standard deviation units higher than those taught without close monitoring or programmes which are developed formatively.

Griswold and Cotton (1986) reviewed research on effective educational practices and gave examples of the implementation of these programmes. "Closely monitored student progress" is one of 13 attributes identified as enhancing student achievement. Howell and Gahley (1986) described a research-based process for collecting data on student achievement and using it to monitor students' progress and make decisions about their instruction.

Cotton (1989) reviewed 23 studies out of which 15 were reviews and eight were studies. 5 out of 8 studies were related to elementary students and three with secondary students. The findings indicated relationship between monitoring student learning and student outcomes, usually achievement. He noticed that out of the kind of monitoring functions investigated, teacher questioning to check student understanding is the focus of three reports. Others include monitoring seatwork--4, assigning/collecting/grading homework--2, conducting periodic reviews in class--2, formative testing--2, and reviewing records--3. Nine of the reports focused on two or more of these functions. The findings revealed that there is a strong positive relationship between content covered and student achievement. Questioning had aspects like keeping questions at an appropriate level of difficulty; paying close attention to who is answering questions during classroom discussion and calling upon non volunteers; asking students to comment or elaborate on one another's answers; and, using information on students levels of understanding to increase the pace of instruction whenever appropriate. The research indicates that this approach can indeed produce achievement benefits. Further, it also revealed the importance of monitoring the class during seatwork. Monitoring seatwork involved systematic procedures for supervising and encouraging students while they work; initiating more
interactions with students during seatwork periods, rather than waiting for students to ask for help; having more substantive interactions with students during seatwork, staying task-oriented, and working through problems with students; giving extra time and attention to students who need extra help and stress careful and consistent checking of assignments.

Mishra (1992) on the basis of his study also concluded that in-service training had a positive impact on teacher behaviour and pupils active participation in the class.

Monk’s (1994) in a study of student’s mathematics and science achievement found that teacher education coursework had a positive effect on student learning and was sometimes more influential than additional subject matter preparation. Earlier in an analysis of science teaching, Perkes (1967-68) had found that teachers’ coursework credits in science were not significantly related to student learning, but coursework in science education was significantly related to students’ achievement on tasks requiring problem solving and application of science knowledge. Teachers with greater training in science teaching were more likely to use laboratory techniques and discussions and to emphasize conceptual applications of ideas, while those with less education training placed more emphasis on memorization.

The National Assessment of Educational Progress has also documented how specific kinds of teacher learning opportunities correlate with their students’ reading achievement. On average, in the 1992 and 1994 assessments, 4th grade students of teachers who were fully certified, who had master’s degrees, and who had professional coursework in literature-based instruction did better than other students on reading assessments (NCES; 1994; NCES, n.d.). While these relationships were modest, the relationships between specific teaching practices and student achievement were often quite pronounced, and these practices were in turn related to teacher learning opportunities. NAEP analyses found that teachers who had had more professional training were more likely to use
teaching practices that are associated with higher reading achievement on the NAEP tests—use of trade books and literature, integration of reading and writing, and frequent visits to the library—and were less likely to engage in extensive use of reading kits, basal readers, workbooks, and multiple choice tests for assessing reading practices than with the less training. Interestingly students whose teachers have higher levels of certification and education and more access to professional development scored higher than students of teachers with lower levels of preparation.

Sehgal (1996) studied the effectiveness of in-service training programme for secondary school teachers in terms of teachers’ competencies and attitude of teachers towards teaching and of the students’ achievements. The pretest-posttest design was adopted in the study. The study followed a quasi-experimental method of research. The effectiveness of self-devised model of in-service education programme was investigated in a systematic and scientific manner. Keeping in view the design of the experiment, multi-stage random sampling was employed. The study was restricted to 120 randomly selected science teachers in private, government and aided secondary schools of Punjab. Baroda General Teaching Competence Scale (BGTC) prepared at the Centre of Advance Study in Education (CASE) M.S. University, Baroda; Teacher Attitude Inventory (TAI) prepared by Ahluwalia (1978); and Achievement Test were used by the investigator to collect data. The statistical significance of the group differences was tested through the application of ‘t’-test. Results revealed that students taught by teachers who received in-service training showed significantly higher achievement mean than students who were taught by teachers who did not receive any in-service training. In-service teachers education and training schedules/models brought significant changes in the teachers teaching competency. Teachers attitude towards profession and academic achievement of students taught by them also showed positive change.

Shrestha (1997) conducted a study on a sample of 14 teachers trained through National Centre of Educational Development, Nepal and 12 untrained teachers
of Kathmandu Valley in order to compare the teaching performance of the trained and the untrained teachers. Teaching performance of both groups of teachers was measured in terms of classroom management, initiation of lesson, use of teaching techniques, use of instructional material and students’ evaluation. The study revealed that the classroom management of both trained and untrained teachers on the whole, was suitable on the basis of space available as per the nature of teaching activities in most of the classes. However, in terms of initiation of lesson by the teachers and the teaching techniques used by them, the trained teachers were found better than their untrained counterparts. The number of trained teachers who presented the lessons by relating them to the previous ones was found to be more (94%) than untrained teachers. Regarding the use of instructional materials, there were only some trained teachers who used the materials. But none of the untrained teachers used the materials. Similarly, most of the trained teachers used evaluation techniques appropriately compared to the untrained teachers. Hence the author concluded that the teaching performance of trained teachers, on the whole, was better than that of untrained teachers.

Hammond (1997) expressed that more than 25 states have enacted legislation to improve teacher recruitment, education, certification or professional development. Evidence suggests that better qualified teachers may make a difference for student learning at classroom, school, and district levels. Spark (2000) on the basis of Harris Poll (1998) reported that ninety percent of Americans believed that the most important factor in improving student achievement is having a well qualified teacher in every classroom.

Archer (1999) findings from value added research and assessment center show that “teachers are the single most important influence on student progress, an even greater determining factors than socioeconomic status and school location. Further, he found that “students who had been taught by three of the least effective teachers in a row record below the 50th percentile in mathematics by
the end of third year. By contrast, those who had three highly effective teachers record above the 80th percentile “

Another study was conducted by Shrestha (2000) to compare the performance and teaching behaviour of teachers trained through various training strategies adopted by NCED, BPEP & DEC in the subjects of Nepal language, social studies and mathematics. The achievement of grade V students taught by three groups was also compared and a strategy was also proposed for improvement of teacher training programme in Nepal. FIACS form developed by Flanders (1960) was used to collect the data regarding teaching behaviour. Along with this interview schedule and achievement tests were also used. Data were analysed using mean, SD, ANOVA and t-ratios. The study revealed that the training performance of NCED and BPEP teachers in terms of teachers’ planning and presentation of lesson, teachers’ instructional qualities, use of instructional materials and blackboard, teaching approaches, students’ evaluation and summarizing the lesson, was found better than that of the DEC teachers in Nepali language, Social Studies and Mathematics. But no significant difference was found between the performance of NCED and BPEP teachers. Regarding the teaching behaviour, the differences in mean, percentage of teacher talk, indirect teacher talk, direct teacher talk, pupil talk, pupil initiative, indirect to direct teacher response, teacher question ratios among the groups of teachers trained through NCED, BPEP & DEC strategies were found statistically insignificant in all the three subjects, that is, Nepali language, Social Studies and Maths.

According to Sanders (1999), the single biggest factor affecting academic growth of any population of youngsters was the effectiveness of the individual classroom. The most important teacher behaviour of effective teaching was the ability to individualize instructions effectively.

Hammond and Sanders (2000) in their research on the impact of teacher quality on student learning, concluded with persuasive arguments about the merit of
increasing teacher quality to improve student performance in their meta analysis of state policy evidence regarding teacher quality and student achievement (using data from 1993-94) schools and staffing surveys and the national assessment of educational progress. Authors found that policy investment in quality of teacher might be related to measures of teacher preparation and certification. They were found to be the strongest co-relates of student achievement.

Mc REL’s, (Marzano, 2000) in the meta analysis of research on the school and teacher impact on student achievement found that school level and teacher level factors accounted for approximately 20 percent of the variance in student achievement.

Miller (2003) in his study on School, Teacher, and Leadership Impacts on Student Achievement quoted that numerous studies revealed the tremendous impact schools and teachers can have on student achievement. Marzano (2003) reviewed a study conducted by Sanders and Horn (1994), and revealed a 39 percentage-point difference in students achievement between students with “most effective” and “least effective” teachers. In classroom headed by teachers characterized as “most effective,” students reported achievement gains of 53 percentage points over the course of one academic year, where as in classroom led by “least effective” teachers student achievement gains averaged 14 percentage points. “Effective teaching begins with effective teacher preparation”, he concluded.

Kunselman, & Johnson, Kathrine (2004) conducted a study on effectiveness of case method to enhance student learning in the area of social science and professional studies was used in six courses to help students a) understand complex and complicated issues and describe interrelated process; b) discuss policy and decision making ideologies that either are politically or socially charged; and c) engage in informative and focused classroom discussion.
Students written comments and scaled responses revealed that the case method was an effective way to enhance student learning.

On the basis of results of studies reviewed in this section following trends can be drawn:

(i) Teaching behaviour significantly affects the achievement of students.
(ii) Training of teachers in effective teaching skills is a strong determinant of their students learning.
(iv) Positive correlation between teachers’ instruction and student achievement is maximized when teachers carefully and regularly structure their activities with features such as advance organizers, links, overviews, outlines and reviews and repetition of the main points regularly.
(v) Higher level of student achievement is associated with teachers’ participation in sustained professional development. Both kind and extent of professional development matters for teaching practice and for student achievement.

2.3 CASE BASED PEDAGOGY AND GENDER

Research into the differences in classroom teacher behaviour between male and female teachers has primarily focussed upon three aspects of teacher behaviour, i) behaviour elicited in terms of leadership style, ii) behaviour related to pedagogical style involving questioning, answering and correcting function of the teacher, iii) behaviour elicited with the differential linguistic usages. Studies which directly explore the impact of case based pedagogy on teacher behaviour are hardly to be noticed. Studies are also available on the effect of pupils' attitude towards teachers’ sex and classroom behaviour and their effects on the achievement and the classroom climate. These studies have been reviewed in this section.

Anderson (1971) indicated that teacher sex was unrelated to pupils perceptions of learning climate within their classes. He reported that the teacher sex, course
content and interaction were not statistically significant in contributing to the learning climate.

Olson (1971) reported that teacher sex was found to be insignificant as predictor of the general quality of the educational process in any school classroom at both elementary and secondary level.

Ryan’s (1960) investigated teachers’ classroom behaviours on the sample of 6179 teachers from 1747 elementary and secondary schools (837 elementary, 910 secondary). The teachers were classified according to grade, subject taught, and sex. He reported that in contrast to men, women teachers at secondary level scored higher on scale, which characterized classroom behaviour as understanding and friendly, responsible and businesslike and stimulating and imaginative. Questionnaire data suggested that women teachers had more favorable attitude towards pupils, democratic classroom practice, permissive educational viewpoints and verbal understanding. Men teachers scored significantly higher with respect to emotional stability than did women teachers in secondary schools. In terms of subject matter area, he witnessed that differences between men and women were found with only two significant trends: for women teachers to score higher in relation to responsible, systematic classroom behaviour, and men teachers to score higher with regard to emotional adjustment.

Bane (1969) found significant relationship between teacher behaviour and sex. Male teachers used greater amount of warning acceptance and more direct behaviour that was also true for female teachers, but in a lesser amount. Felsenthal (1969) also found the sex factor to be related to teacher behaviour.

A study on the patterns of teaching behaviour of Social studies teachers in relation to sex was conducted by Santhanam, Quaraishi and Lulla (1970). Flanders Ten categories system of class-room verbal interaction was used for observation. The observers were trained. Their inter-observer reliability was found to be above .85 in terms of Scott’s coefficient. The sample consisted of 36
teachers (17 male and 19 female) teaching social studies in Baroda High Schools. On the basis of two separate percentage master matrix for male and female teachers, following conclusions were drawn. Communication was relatively faster in classes conducted by women teachers, men teachers talked more than their women counterparts. Women teachers were more indirect than men teachers on the whole. However, men teachers scored over the women teachers in the matter of manipulating the emotional favorable. Emphasis on content was much higher with men teachers than with women teachers. The capacity for shift between categories was seen more in the case of women teachers. Women teachers were more stringent in the issue of praise/encouragement. Women teachers on the whole responded more to students than did the men teachers.

Mehta (1976) also considered the variable of sex in his inquiry into the relationship between teachers’ classroom communication patterns and certain perceptual factors. He found that there was no relationship between the sex of the teacher and their communication pattern in classroom. However, significant negative relationship was found between sex of the teachers and TRR (Teacher Response Ratio). The male teachers were not found to differ from female teachers significantly regarding i/d and I/D and TQR. But the male teachers differed significantly from female teachers regarding TRR.

Sofat (1977), on the basis of his study on construction and standardization of self-evaluation scale of teaching effectiveness of secondary teacher, concluded that women teachers were more effective than men teachers.

Sharma (1979) studied certain aspects of classroom behaviour of science teachers in Macro and Micro teaching situations using Flanders Interaction Analysis Category System. Sex wise analysis of data was also made by the investigation. The findings were a) sex did not play an important part in shaping teachers’ influence, b) the communication was relatively faster in the classes conducted by female science teachers than classes conducted by male science
teachers, c) in the case of female science teachers, it had significant values with respect to friendliness and masculinity only, d) in the case of male teachers, the structuring of classroom control has no relationship with any traits of personality.

Thakur (1980) observed the teaching behaviour of 200 teachers in their respective classrooms for twenty minutes on three different occasions on Flanders Interaction Analysis Category System and the results revealed no significant differences in the teaching behaviour of the teachers due to the variable sex, age and experience.

One of the objectives of Singh’s (1985) study "A Factor Analytic Study of Teacher Behaviour“ was to study and compare factorial structure of male and female teachers. Results revealed teaching behaviour of male teacher was composed of seven factors while that of female teacher of eight factors. The six factors common to the teaching behaviour of male and female teachers were skills of questioning, of black board writing, of explanation, of reinforcement, of introducing a lesson and summarizing a lesson. The skill of illustrating with examples was found to be specific to the teaching behaviour of male teachers. Skill of using teaching aid and skill of questioning to develop critical awareness were specific to female teachers.

Prakasham (1986) conducted a study on teacher effectiveness as a function of school organizational climate and teaching competency. The objectives of the study were to study the effect of school organization climate on teacher effectiveness, study the effect of teaching competencies on teacher effectiveness and study the effect of school organizational climate on teacher competency. Gender differences were also examined. Data were analysed with mean, t-values, coefficient of correlation and ANOVA. Some of the findings were; 1) Teachers who worked in an open school climate were better in teaching competency and teacher effectiveness than those employed in schools with autonomous, familiar control and closed climate, 2) No significant difference
was observed between male and female teachers on the test of teaching competency and teacher effectiveness on the global scale, though male teachers were found moderately better in teaching competencies under all types of variations, whereas female teachers were found moderately better than male teachers on teacher effectiveness only under Christian management. Among the various independent variables affecting teacher effectiveness, the main effect of teaching competency was found significantly higher than territorial variations and school organizational climate. The main effect of management type as well as sex on teacher effectiveness was found significant and the joint interaction of territorial variations and sex as well as territorial variation and teaching competency and sex was found to have a significant interactional effect on teacher effectiveness.

Sriiwasan (1992) studied the personality traits of primary school teachers of Cuddalore Educational District in Tamilnadu. These traits were compared for male and female teachers. Results of the study were i) sex, age and community did not affect the attitude of teachers towards teaching, ii) significant difference existed in same traits between men and women teachers e.g. Lack of empathy.

Dandapani (1992) conducted a study on dimensions of effective teaching of mathematics. The study identifies the process variables and the characteristics of mathematics. Further, it builds up a model to identify effective and ineffective teachers. One of the main findings was that female teachers had a significantly higher perception than the male teacher.

Scrimgeour (1993) compared the scores of boys and girls on seven different areas: class administration, lesson core, questions asked of, questions asked by, tasks allocated to, discipline of, and other transactions. Amazingly, boys scored higher on all of these than girls did. Obviously there is some sort of phenomenon occurring in the classroom that is related to the male student predominating over the female students. He also examined gender bias in subject content. He found none in Mathematics and Geography, but did find gender bias in English and...
History. In English, the text being studied by the children featured primarily male characters, and in history, the topics covered were mainly concerning famous men. The females that were mentioned were generally stereotyped or not portrayed positively. Further, he also revealed that the gender of the teacher did not matter when examining the seven areas or the course content.

Rabeiro (1999) conducted a study on fifty lecturers from college and university teaching departments from States of Goa, Karnataka and Maharastra. He found that gender and age of the teacher had no bearing on their attitude towards their teaching profession.

In a study by Quek, Wong, and Fraser (2002), male students found a chemistry laboratory to be less equipped than girls did, and boys also thought that they had less rules and restrictions about the chemistry equipment than the girls thought. Boys got into more trouble and were also more assertive than girls.

Klein (2004) conducted a study for gender differences in scholastic achievement. Achievement scores of 3446 pupils in the 5th through 11th grades, half girls and half boys were sampled. In the study teacher gender among other variables was controlled. Finding indicates that most of the variance in achievement was due to teacher gender.

The review of research as presented in this part submits a mixed trend regarding the relationship of teacher sex with teachers’ classroom behaviour.

(i) By and large, no significant sex differences are noticed in respect of their attitude towards teaching profession, to classroom behaviour as measured by FIACS.

(ii) Sex is insignificant predictor of general quality of education process.

(iii) A few studies show sex to be related to classroom verbal behaviour of teachers. While female teachers as compared to males have been found more understanding, friendly, simulative, imaginative, apt in using teaching aids and skill in questioning and indirect in their behaviour; male teachers are reported to be superior than the female counterparts with
respect to praise and encouragement, illustration with examples, emotional stability and acceptance. Communication generally is factor in classes of female teachers.

2.4 HYPOTHESES OF THE STUDY

Due to lack of sufficient research evidence as to the impact of case based pedagogy on teacher classroom behaviour and on student learning, following null hypotheses were formulated for the present study:

Ia Case based pedagogy will not have a significant effect on lesson structure component of prospective elementary teachers’ classroom behaviour.

Ib There will be no significant differences in lesson structure component of prospective elementary teachers’ classroom behaviour due to the variable of sex.

Ic There will be no significant interactional effect of case based pedagogy X sex on lesson structure component of prospective elementary teachers’ classroom behaviour.

IIa Case based pedagogy will not have a significant effect on pupil teacher verbal interaction component of prospective elementary teachers’ classroom behaviour.

IIb There will be no significant differences in pupil teacher verbal interaction component of prospective elementary teachers’ classroom behaviour due to the variable of sex.

Iic There will be no significant interactional effect of case based pedagogy X sex on pupil teacher verbal interaction component of prospective elementary teachers’ classroom behaviour.

IIIa Case based pedagogy will not have a significant effect on classroom management component of prospective elementary teachers’ classroom behaviour.

IIIb There will be no significant differences in classroom management component of prospective elementary teachers’ classroom behaviour due to the variable of sex.
IIIc There will be no significant interactional effect of case based pedagogy X sex on classroom management component of prospective elementary teachers’ classroom behaviour.

IVa Case based pedagogy will not have a significant effect on prospective elementary teachers’ composite classroom behaviour.

IVb There will be no significant differences in the prospective elementary teachers’ composite classroom behaviour due to the variable of sex.

IVc There will be no interactional effect of case based pedagogy X sex on prospective elementary teachers’ composite classroom behaviour.

V The training of prospective elementary teachers through case based pedagogy will not have a significant effect on their student’s learning in geographical concepts.