CHAPTER II

REVIEW OF RELATED LITERATURE AND RESEARCHES

2.1 Introduction:

The knowledge was preserved, conserved in books and libraries since from origin of the universe. These sources help the scholars for transmission of this knowledge to others. A careful review of the research journals, books, dissertations, theses and other sources of information helps the investigator for planning research study.

Research is a careful investigation in search of new facts in any branch of knowledge involving the application of a scientific method in the study of the problem. It offers a systematic attempt to obtain answers to meaningful questions (Best and Kahn, 2011). A research work is not meaningful without a thorough analysis of related works. Review of related research work in a problem area helps the researcher to know what is already discovered, what others attempted to find out and what problems still remained to be solved. Review of related literatures is helpful for following purposes as:

1. To provide the evidences related to problem and area which is to be investigating and thus avoid the risk of duplication.
2. It provides ideas, theories, explanation or hypotheses in formulating the problem.
3. It provides necessary information about research methods.
4. It locates comparative data useful in interpretation of the results.
5. To know information related to research tools.
Thus review of related literature is an essential prerequisite for planning and execution of research work.

An attempt has been made here to examine the related literature of the problem namely ‘A study of effect of cooperative learning strategy on adjustment and attitudes of B.Ed. college trainees of Pune University’. The summary of review of related literature and researches is given in Table 2.1.

Table 2.1
Summary of Review of Related Literature and Researches

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The review of related literature and research studies has been divided into two sections:

2.2. Researches on effectiveness of cooperative learning on adjustment

2.3 Researches on effectiveness of cooperative learning on attitudes

2.2 Researches on effectiveness of cooperative learning on adjustment:

Most of the literature and researches in cooperative learning are found in achievement area. While reviewing literature the researcher found cross references in various articles related to psychological adjustment. By
knowing the benefits of cooperative learning the researcher studied impact of cooperative learning on this variable i.e. adjustment.

**Fantuzzo, Riggo Connelly and Dimeff (1989)** studied ‘Effects of reciprocal peer tutoring on academic achievement and psychological adjustment’. A component analysis of the reciprocal peer tutoring (RPT) strategy was performed which previous researches had demonstrated to be effective in producing cognitive gains, lowering subjective distress and enhancing course satisfaction. To compare the RPT strategy 100 students were randomly assigned to one of four groups. The RPT strategy was systematically compared with its components: dyadic, mutual exchange and structured-learning format. Pretest analyses revealed that there were no significant group differences in demographic variables or pretest scores on course examinations and self-report inventories of subjective distress. Further analysis supported past findings on the superiority of the RPT strategy. This superiority was attributed to the RPT group’s unique combination of elements: preparing to teach a peer, teaching a peer, and accountability for this process.

**Fantuzzo, Heller (1992)** studied ‘Effects of reciprocal peer tutoring on mathematics and school adjustment’ showed the impact of structured tutoring and group reward components of the reciprocal peer tutoring on achievement and adjustment. The sample of the study comprises 64 elementary students having high risk for academic failure selected randomly from a pool of 80 4th and 5th grade students. Students were assigned randomly to four conditions: structure plus reward, reward only, structure only and no structure and no reward. Findings indicate that students who received both components showed the highest levels of accurate maths
computations. Analysis of collected measures revealed that students in the group reward conditions received higher classroom conduct reports than students in the non reward conditions. Students in the structured condition reported higher levels of scholastic competency and self control than did students in the non structured conditions. Data were reported on treatment integrity and teacher and student satisfaction.

Don (1997) studied ‘Social skilling through cooperative learning’. The reason behind students’ misbehaviour in some school student was found the lack of social skills. Research suggests that cooperative learning enhances social skills in all ages. The investigator implemented a 10 week cooperative learning program for enhancing social skills along with academic skills. Students were oriented for social skills and task oriented skills. Pupils first worked in pair and later on in groups. Students enjoyed working in groups and there is increase in social and personal adjustment along with social growth. The interpersonal relationship of students improved with their groups and with the teacher.

Johnson and Johnson and Smith (1998) studied cooperative learning on college students. They conducted 305 studies comparing the relative efficacy of cooperative, competitive and individualistic learning to the quality of college experience and psychological adjustment to college. They found that there was increase in the quality of social adjustment to college life, add social goals for continued attendance, and reduce uncertainty about attending college, increase integration into college life. They also observed that cooperative learning increases students’ interest in subject and college curricula and heighten social membership in college. They argued that attending college needs personal adjustment for many students. They found
cooperative learning is highly correlated to wide indices of psychological pathology; competitiveness seems related to a complex mixture of indices of health and pathology. One of the important aspects of psychological health is self-esteem. Members of cooperative groups become more socially skilled as compared to competitive and individualistic learning.

Roots of cooperative learning are embedded in social interdependence theory. Johnson and Johnson (2005) conducted eight studies on measuring relationship between social interdependence and psychological adjustment. The sample includes university students, older adults, suburban high school seniors, juvenile and adult prisoners, step couples, Olympic hockey players and Chinese business managers. The results of these subjects concluded that working cooperatively with peers and valuing cooperation added greater psychological health and adjustment than competing with peers or independently. Cooperativeness is positively related to emotional maturity, well adjusted social relations, strong personal identity, ability to cope up with adversity, social competencies, basic trust and optimism about people, self confidence, independence and autonomy, higher self esteem and perspective talking skills.

Cooperative learning has been linked to positive social and affective outcomes (Scott Johnson, 2009). The students who worked in group found socially more skilled than competitive environment.

Cooperative learning was found more effective over individual and competitive learning (Johnson and Johnson and Smith). Cooperative learning enhances psychological health and adjustment (Johnson and Johnson, 1994).
Scott Johnsen (2009) in his Action research on ‘Improving achievement and attitude through cooperative learning’ also found that cooperative learning affects positively on social and affective aspects of students’ adjustment.

Prasad B. Mathew (1976) in his study ‘Some personality factors related to underachievement in science’ concluded that group adjustment, total adjustment and self-esteem are responsible for achievement.

2.3 Researches on effectiveness of Cooperative learning on Attitudes:

A. Studies abroad:

Anderson, Johnson and Johnson (1976) conducted research on 30 fifth grade students to study the effects of structuring classroom learning cooperatively and individualistically on students’ ability to appreciate the effective perspective of others altruism, attitude towards classroom life and achievement. The students were matched on their previous achievements in language arts. The even numbered students were placed in individualistic learning condition while odd numbered in cooperative learning condition. During evaluation the investigators observed no competition between groups or between persons. The results shows cooperative learning is more effective in altruism, positive attitude towards classroom life and higher achievement than individual learning.

Slavin (1978) compared the independent effects of level of reward in cooperative learning and entire class on students’ achievement and attitudes on 205 seventh graders in English. He found that reward level effects in favour of team reward and comparison group effects in favour of comparison with equals on percentage on time task, positive interpersonal
perceptions. In case of attitudes, reward effect favours team rewards were supported for perceived probability of outcome on performance, liking of others peer support for academic performance. Comparison group effect in favour of comparison with equals were supported for feeling of being liked, liking of others, peer support for academic performance and number of friends named. No academic achievement effect was found for either factor.

Lang (1983) investigated the use of cooperative learning technique, Teams Games Tournament (TGT). He found that academic achievement and attitudes towards Economics subject were not affected by treatment of TGT to experimental group. He conducted his experiment on 60 Microeconomics college students of different ability levels. He placed 30 students in control and experimental group. It was found that there was no significant difference between the attitudes and achievement scores of college students of control and experimental group.

Baldwin (1986) investigated the development and implementation of model for accommodation of performances for alternative instructional environments with respect to sex, academic background, mathematics achievement, attitudes and communication apprehension. He studied three instructional modes: Individual Mode (IM) Small Group Mode (SGM) and Large Group Mode (LGM). For this study 55 college students were selected. The investigator concluded that

i. Females and students with weak academic background liked to prefer in the SGM environment.

ii. Students with higher level of communication apprehension tended to avoid the SGM environment.
iii. New college students and students with negative attitudes towards mathematics tended to avoid IM environment.

iv. Students with higher grades in high school tended to prefer the LGM environment.

**Nederhood (1986)** studied the effects of cooperative learning technique on achievement and attitudes of seventh graders. He conducted his experiment on 1145 students with five experimental teaching teams of Mathematics, language, Arts and Social studies. He found significant positive results with positive classroom involvement, increased number of friends, higher academic expectations and increased self confidence. No significant differences were found achievement.

**Davis (1988)** investigated the effects of using group process skills of ‘Think Aloud’ and oral summarize in a series of cooperative learning lessons on attitudes and achievement. The sample consists of 104 seventh grade mathematics students of average ability. Result indicated that there were no significant difference between attitudes and achievements of control and experimental group. But found that students exposed to group process skills were more verbal, increase in interactions and had more process oriented explanations for word problems.

**Williams (1988)** studied the effect of STAD and TGT methods of cooperative learning on achievement and attitude towards Algebra. He worked on 165 Algebra students in two senior high schools and one junior high school. He found there was significant difference in average gain scores of control and experimental group in Algebra I test. But there was no significant difference between the mean scores of attitudes of both the groups.
Glassman, Phyllis (1989) investigated effect of cooperative learning on achievement, attitude and self-esteem of Mathematics writing and reading in the intermediate grades. He studied above mentioned variables with respect to gender, ability and race of sample group. He used quasi experimental design with random assignment of teachers to experimental and control groups. The sample consists of 441 students in two sub-urban intermediate schools on Long Island. There was significant difference between the mean scores of achievements of two groups related to writing ideas. Cooperative learning method was found effective in attitudes towards reading and perceived abilities in reading. Girls from experimental group showed higher gains in Mathematics whereas boys were found enhanced self-esteem.

Orlando, Joseph Edward (1991) studied effect of cooperative learning on achievement and in Community College Freshman English classes. STAD method developed by Slavin was used for twelve weeks. Sample comprises 132 college students placed in quasi experimental design. There was increase in achievement due to STAD strategy. Treatment of STAD strategy was applied to the experimental group the class students showed positive attitude towards the subject English.

Coston (1994) studied effect of cooperative and graphics calculator enhanced instruction and a combination of these approaches on students’ understanding of the function concept, Mathematics achievement of Algebraic skills and Mathematics attitude of college Algebra students. He found that cooperative learning positively affects understanding of functions and related topics, while combined treatment significantly affects student’s attitude towards Mathematics.
Morgan (1994) studied effect of cooperative learning with and without individual accountability and traditional instruction on pre-instructions and post-instructional achievement, retention and attitude towards school and Mathematics. The sample consists of third grade students. He observed that students with low ability achieved greater success in post test when exposed to process oriented individual accountability as compared to students of traditional groups with low ability. There was no significant difference between mean scores of traditional group and cooperative learning group without individual accountability. Cooperative learning group without individual accountability showed significant effect on achievement whereas cooperative learning without individual accountability showed significant effects on attitudes towards Mathematics.

Watson (1996) investigated the use of cooperative learning and small group instruction on 64 remedial college students in beginning Algebra. He observed increase in achievement, attitudes and attribution. Remedial students in cooperative learning group stay in college for longer time, take to succeed in more courses than traditional remediation group.

Armstrong (1997) investigated the effect of STAD on academic achievement and attitude towards Social studies. The sample consists of 47 twelfth grade Social studies students in two advanced progressive American classes. He observed that application of STAD in upper secondary social studies not significantly affects the achievement and attitudes towards Social studies.

Abu Rosini (1997) studied the effects of cooperative learning methods on achievement, retention and attitudes of Home Economics
students in North Carolina. She used STAD as cooperative learning strategy with a quasi-experimental design. She prepared lesson plans on unit Special nutritional needs and administered a questionnaire prepared by faculty of University of Illinois. The STAD group comprises 91 students whole 106 students were placed in non-cooperative learning group. The test of retention was administered three weeks after achievement test. MANCOVA showed no significant difference upon dependent variable between the teaching methods used. There was no significant difference in students’ attitude towards the subject and methods used.

Whicker, Bol and Nunnery (1997) investigated the effects of cooperative learning on achievement and attitudes on Mathematics students of secondary class. The study was comparison of cooperative learning versus individualistic learning. Results indicated that achievement of cooperative learning group was better as compared to individual learning group. Survey indicated that students like to work in cooperative groups and appreciated for getting help from peers for learning difficult concepts.

Alwaris (2000) found that the best predictor of the achievement in Mathematics was the students’ attitude towards Mathematics which was better achieved through small group learning.

Klein and Schnackenberg (2000) studied effects of cooperative learning and the affiliation motive on achievement, attitude and student interactions. Sample was classified as high and low need for affiliation and used informal cooperative learning strategy and individual strategy. Individual learning strategy comprises receiving information, examples, practice and feedback from an instructional television lesson. Results indicated that individual learning found more effective than informal
cooperative learning for continuing motivation for working alone. High affiliation dyads exhibited significantly more on task group behaviours and significantly more off-task behaviours than low affiliation dyads.

Mohammad H. Ahmadi (2000) studied the impact of cooperative learning in teaching Mathematics. The sample for the present study was from University of Wisconsin-Whitewater in two Mathematics courses one section of Finite Mathematics and two sections of Business Calculus. The dependent variables in the study were student performance, interest, motivation, conceptual understanding and attitude towards Mathematics. The result reveals that students in cooperative learning group performed better than traditional sections, their attitude towards Mathematics improved. Students actually participated in outside classroom work and more interested in and motivated to do Mathematics.

Winston Vaughan (2002) studied effects of cooperative learning on achievement and attitude towards Mathematics of a group of fifth grade students of Color in a culture different from the United States (i.e. Bermuda). He found significant differences among the pre and post test scores of attitudes and achievements (found better than control group) students participated in 12 weeks of Slavin’s STAD method. The California Achievement Test (1985) from E and Penelope Peterson’s Attitude towards Mathematics Scale were used as tools. Data was analysed with 1 factor repeated measures of variance.

Sutaporn Chayarthee (2003) conducted Ph.D. research with title ‘Reading comprehension and attitude and behaviour of students taught ESL by cooperative learning in Prathom (Grade) 6 classrooms in Thailand’. The investigator used cooperative learning method against Thai communicative
methodology to determine their effectiveness in reading comprehension, attitude and behaviour of prathom 6 th class students. The investigator conducted the study in three phases. Phase I involved creating a linear scale of English reading comprehension, a joint scale of attitude and behaviour. In phase II the experimental group was taught through cooperative learning while control group by Thai communicative teaching methodology. In phase III trainee teachers kept journal records of their attitude and behaviour towards cooperative learning. Experimental group comprises 96 students selected randomly from three primary schools in Ratchaburi, Thailand. Pretest, posttests were administered and significant difference was found when data was analysed using ANOVA in SPSS package. The main four findings of this study were:

i. Students improved their English reading comprehension under cooperative learning method than Thai communicative methods of teaching.

ii. Students taught through cooperative learning improved their English reading comprehension significantly more than Thai communicative methods of teaching.

iii. There was improvement in attitude and behaviour towards learning English as a second language in both methods of teaching.

iv. Students taught through cooperative learning improved their attitude and behaviour towards learning English as a second language than Thai communicative methods of teaching.

Mai Neo (2005) in is study ‘Engaging students in group-based cooperative learning: A Malaysian perspective’ indicated that attitude towards the subject was increased. The study sample was students in the
Courseware class in Faculty of Creative Multimedia (FCM) from Multimedia University, Malaysia. The study was conducted in three stages like small group research papers, sub-groups website development and class homepage. The students were given in 13 item survey to study their attitudes towards the project. The attitude measured students’ teamwork and communication skills, project management, ability to perform and personal attitudes. Results showed positive effects on attitude towards the project.

**Fengfeng Ke and Barbara Grabowski (2006)** studied effect of game playing for maths learning. She included 125 fifth grade students for Teams Games Tournament (TGT) as cooperative learning strategy. She studied effect of TGT on attitudes towards Mathematics subject. The instruments used in the study were researcher developed Games Skill Arithmetic Test (GSAT) and Topia’s Attitude towards Maths Inventory (ATMI). MANCOVA indicated that game playing was more effective than drills in promoting Mathematics’ performance and cooperative game playing was most effective for promoting positive Mathematics attitude ($F = 4.395 \beta = 0.002$) regardless of students ‘ individual differences. She also observed that there was no effect of gender on attitudes.

**Wichadee S. (2005)** also studied ‘Effects of cooperative learning on English reading skills and attitudes of first year students at Bangkok University’. He used STAD program for eight weeks period on the sample. The sample was 40 first year students of the School of communication Arts at Bangkok University. The research design used was one group pre-test-post test. The data was collected with the help of questionnaire, cooperative learning behavioural assessment form, individual quiz and the interview technique. The data obtained was analysed using SPSS package. The results
from t-test showed that STAD method was effective than conventional method of instruction. The questionnaire showed that students’ attitude towards cooperative learning was positive. Interview showed advantages as well as disadvantages of cooperative learning.

**Shula G. Ramsay and Herbert C. Richards (2008)** studied effects of cooperative learning environment on academic attitudes of gifted students. Data was collected from 28 classes of 6th, 7th and 8th graders in four schools of sample 851. Teacher questionnaire and attitude interview, Estes Attitude Scales (1981) and Cooperative Learning Scale (CLS) developed by the investigator was used for current study. Estes Attitude Scales was administered to all participating classes but CLA was administered to only those classes in which cooperative learning methods were used. The study revealed that:

a. In classes where cooperative learning was used, found correlation between CLA and attitudes towards subject and schools.

b. Boys exhibited more positive attitudes towards cooperative learning and subject than girls.

c. There was no significant difference between attitudes of gifted children and non-gifted children towards subject English when exposed to cooperative learning. For data analysis MANOVA was used.

**Akinyemi Akinbobola (2009)** conducted a study to find out the attitudes of students’ towards the use of cooperative learning, competitive and individualistic learning strategies in Nigerian Senior Secondary Schools. The investigator also compared the attitudes of boys and girls students towards the subject Physics. The design selected for the present
study was quasi experimental. 140 students were selected by randomly. A Structured Attitude towards Physics Questionnaire (SATPQ) was used for data collection. Analysis of variance was used and results showed that cooperative learning was the most effective in facilitating students’ attitude towards Physics. Individualistic learning strategy being seems to be the least facilitative. The results also showed an insignificant gender difference in the attitudes of students’ towards subject Physics.

Hornby (2009) studied the effect of cooperative learning with trainee teachers. 44 final year teacher trainees participated in a study which was compared the effectiveness of a two hour workshop on cooperative learning with and without two key elements i.e. individual accountability and positive interdependence. A multi choice test focused on what students learn and post-workshop questionnaire focusing on students’ experiences of attitudes towards cooperative learning were used to evaluate the impact of workshop. Results indicated that where individual accountability and positive interdependence were structured showed greater learning. They also indicated that the inclusion of these two elements did not significantly affect students’ experiences of the workshops or their attitude towards cooperative learning.

Scott Johnsen (2009) conducted Action research on ‘Improving achievement and attitude through cooperative learning in Math classes. The sample comprises 13 students from 8th grade class. The students were placed in two different types of groups: teacher formed groups and student formed groups. The investigator prepared students’ pre-project survey, post project survey and student interview questionnaire. The investigator found that the type of group formation can have an impact on the attitudes of students and
how well they work together. He also discovered that there was no real change in students’ achievement, but the longer the group worked together the better they performed. He also found that there perfect bonding between the students and improvement in social and personal skills. The results showed that students’ attitudes towards Mathematics increased due to cooperative learning.

**Zahariah Mohd Zain and Geetha Subramaniam (2009)** studied effect of cooperative learning approach on Accounting students performance and attitude. The study had experimental and post experimental design. 61 undergraduate students enrolled in accounting courses in a public university in Malaysia were chosen as the sample of this study. The control group comprising 30 students were taught by using conventional approach and the experimental group had 31 students were taught by using STAD strategy. A post experimental questionnaire developed by the investigator was used to observe students’ attitude towards Economics subject. t-test was used to compare the mean scores of attitudes and performance. The investigators revealed that there was no significant difference in performance of control and experimental group. But there were significant differences on students’ attitude between the cooperative learning approach and the conventional group. The participants in the cooperative learning approach group have a more positive attitude towards the subject.

**Patrick Ajaja (2010)** studied effect of cooperative learning on junior secondary school students’ achievement and attitudes in Integrated Science. The study also determines how sex and ability affects students’ achievement in integrated science. The investigator used factorial pre-test, post-test
control group design. The sample of 120 students was randomly selected from Ahavo Mixed Secondary School of Nigeria. Each group had 30 participants. The tools used in the study were Scholastic Ability Test in Integrated Science (SATIS), Students’ Attitude Scale (SAS) and Integrated Science Achievement Test (ISAT). ANOVA and t-test were used to compare the data. The major findings of the study included:

a. A significant higher achievement test scores of students in cooperative learning group than in traditional classroom.
b. A significant higher achievement test scores of all students of varying abilities in cooperative learning groups than those in traditional classrooms.
c. There was no significant difference in achievement test scores between male and female students of cooperative learning group.
d. Non significant interaction effect between sex and ability, sex and method, ability and method and among method, sex and ability on achievement.
e. Students in cooperative learning classroom were found to exhibit better attitude towards the learning of Integrated Science.

Thurstone et. al. (2010) conducted a two year longitudinal study of the effects of cooperative learning on science attainment, attitude towards Science and social connectedness during transition from primary to high school. Higher gains were observed in previous project in primary schools and in social aspects of social life. This project followed 204 children involved in the previous project and 440 comparison children who were not as they undertook transition from 24 primary schools to 16 high schools. Cognitive, affective and social gains were observed in the original project.
The implications improving the effectiveness of transition by using cooperative learning initiatives are explored. Possibilities for future research and the implications for practice and policy were discussed.

Yurdabakan (2010) studied the investigation of peer assessment in primary school cooperative learning groups with respect to gender. The study was conducted at fourth grade social sciences course with 46 participants. The age group was from 9 to 10 and sample had 28 female and 18 male students. Male and female students scored their fellow and opposite sexes with respect to their contribution to group work and their learning levels. The compatibility between female and teacher scores was higher than male and teacher scores.

Zakaria (2010) studied effects of cooperative learning on students’ achievement and attitude towards Mathematics. A quasi-experimental design was used on two form one classes in Miri, Sarawak. The experimental group had 44 and 38 students were placed in control group. Daily quiz was organised as a tool for formative assessment. Tools used were achievement test and a questionnaire for testing attitude towards Mathematics. The experiment was carried out for two weeks. Data was analysed with the help of t-test. The investigator found that achievement and attitudes of students were improved due to cooperative learning.

Michael (2012) studied effects of the STAD cooperative learning method on student achievement, attitude and motivation in Economics education. For the present research the investigator used Slavin’s (1998) model of STAD. Pre test- post test quasi-experimental design was used. 168 B.Ed. third year students were assigned using stratified random sampling. Experimental group had 85 and control group had 83 students. Both groups
were taught by researcher for 12 week period. Motivation Scale Questionnaire was prepared by the investigator; Test of Economic Literacy (TEL) and Economics Modulator Tests (EMT) were used. The data was calculated using t-test and ANOVA. Results showed that STAD was more effective than direct instructions. STAD as a cooperative learning experience leads to better performance of achievement, attitudes towards Mathematics than direct instruction.

**Ozedmir (2012)** studied high school students’ attitude towards Geography classes. The sample for the present study had 200 students from Karabuk. Data was collected by using Geography Attitude Scale (GAS) prepared by Ayd (2009). ANOVA and t-test were used for data analysis statistical tools. 83.5% of students loved Geography. The students’ attitude towards Geography courses related to gender and class level had no effect.

**Hossain Anowar and Rohani Ahmad (2013)** also conducted research on ‘Effects of cooperative learning on students’ achievement and attitudes in secondary Mathematics’. For the present study the investigator used quasi-experimental pre test- post test control group design. A total of 80 students 40 from Boys school and 40 from Girl’s school from Natore, Bangladesh were selected as samples. Both the control and experimental groups were taught by the teachers from respective schools having more than 12 years of teaching experience in Mathematics. The study was conducted for 15 weeks. Pre test and post test achievement and attitude tests were administered on both the groups. The mean for the experimental group (M = 47.56) was greater than control group (M = 35.31) for post test. It revealed that the performance of experimental group was better than control group. t- test was used to compare the groups. The attitudes of experimental
groups showed improvement (M = 4.75) over control group (M = 4.00). When the investigator compared the achievement of boys and girls in Mathematics it was found that girls were better than boys performance when exposed to cooperative learning (M for girls = 47.75 and for boys M = 47.37). The researcher also compared attitudes of boys and girls and found there was no significant difference between attitudes of boys and girls students when exposed to cooperative learning [t (38) = 1.99, p> o.053].

Naseer Omer (2014) investigated effects of cooperative learning in enhancing speaking skills and attitudes towards learning English. The experiment was conducted on undergraduate students from Hadhramount University of Yemen. A quasi-experimental non equivalent control group pre test post test design was used. Control group had 30 and experimental group had 30 students. The samples’ speaking skills were first examined through an English oral test prior to and after implementing cooperative learning activities. A five point Likert scale questionnaire was developed by Mac Leish (2009) was administered before and after the use of cooperative learning strategy to identify the changes in attitudes towards learning English. The data was analysed using basic and inferential statistical methods like standard deviation, t-test. The results showed that there was increase in students’ English speaking skills and attitudes of experimental group as compared to control group.

Rose Akuka (2014) studied effect of Computer Based Cooperative Learning (CBCLM) on students’ attitude in English grammar. The researcher conducted study on 138 secondary schools in Njoro sub country. Solomon four non-equivalent control group quasi-experimental designs were used. Students’ Attitude Questionnaire (SAQ) having 20 questions
was used before and after treatment. The instrument was modified from Liboss (1997). The data was analysed using one way ANOVA. The result showed that there was no significant difference in attitudes of $C_1$ and $C_2$ and $E_1$ and $E_2$. But there was significant difference in $C_1$ and $E_1$ and $C_2$ and $E_2$. Investigator concluded that CBCLM was more effective than conventional methods of instructions.

Sonoi Makini (2014) conducted a study to see effectiveness of cooperative learning on students’ achievement and attitude towards oral literatures. Genres in selected secondary schools in Kisli District of Kenya were included in sample. Purposive sampling was used for selection of secondary schools and 160 students using simple random sampling technique were selected. A quasi-experimental Solomon four group non equivalent design was used. Student Attitude Questionnaire (SAQ) and Oral Literature Genres Achievement Test (OLGAT) were used. ANCOVA was used to adjust existing differences and ANOVA was used for data analysis. The result showed that the students under treatment had superior achievement and attitude than conventional method.

Gulfer Carper (2015) conducted a meta-analysis research on efficacy of the cooperative learning method on Mathematics achievement and attitude. The researcher covered experimental studies showing influence of cooperative learning method over traditional methods since from 1988 to 2010. The meta-analysis method was used in which analysis of analyses and combines different research findings using qualitative techniques. Data was collected from experimental studies conducted from 1988-2010. ProQuest, Digital dissertations, Ulakbim, EBSCO, ERIC and Google Scholar databases were searched for achievement and attitudes towards
Mathematics. 26 studies were used for analysis in this meta-analysis. Data collected was analysed with the help of MetaWin 2.0 Statistical Program and the significance level was determined at 0.05 level for all statistical analyses. Results showed that cooperative learning methods were most effective at the university level in Mathematics achievement (d = 1.33). The investigator also concluded that highest effect was found in Geometry (d = 0.67) and Algebra (d = 0.82). The most effective cooperative learning method for increasing Mathematics achievement was unstructured (d = 0.91) and STAD technique (d = 0.72). The investigator included seven studies of attitudes towards Mathematics. The results showed that cooperative learning method was better than traditional methods in terms of an increasingly positive attitude towards Mathematics (ES = 0.6).

**B. Studies in India:**

**Ahuja (1994)** studied the effectiveness of the use of cooperative learning strategy on academic achievement, attitude towards Science class and process skills of seventh graders. The investigator placed 48 students in control and 68 students in experimental group. The collected data was analysed using ANCOVA. Results showed that post test scores of attitudes and adjustment in science increased due to cooperative learning method. The process skills were not affected by instructional methods. The interview students showed favourable attitude towards cooperative learning.

**Kalpana (2008)** investigated effect of cooperative learning on attitudes, achievement and social skills. The sample had 112 students of seventh class divided into different cognitive level. The sample was divided into field independent and field-dependent students who attained more in
achievement and attitudes when exposed to cooperative learning. Social skills were not improved during the study.

**Dahiya Meenakshi (2011)** conducted ‘A study of effectiveness of Student Teams Achievement Divisions (STAD) and Group Investigation (GI) methods of cooperative learning on high school students’. A pre test-post test control group quasi-experimental design was employed with purposive sampling. The study involved three groups of seventh standard students from the same school. The sample included 120 students studied in two sections of seventh grade Government Model Secondary school, sector 28D Chandigarh. The investigator formed three groups having 40 students in each group like EI, EII and control group. EI group was taught by STAD, EII by GI and control group by traditional approach. The researcher used Culture Fair Intelligence Test (R. B. Cattell and A.K.S. Cattell), Socio economic Status Scale (Singh, radhey Shyam and Kumar) standardised tests. The investigator developed achievement test, cooperative lesson plans, worksheets and formative tests. The data was analysed using ANOVA. The results of study showed that both STAD and GI methods were more effective than traditional approach. The achievement in Physics was increased due to STAD and GI methods.

**Santosh (2012)** conducted ‘A comparative study of the effectiveness of Student-Teams Achievement Divisions (STAD) and Jigsaw methods of cooperative learning’. The investigator compared the achievement scores and self concept scores of STAD and Jigsaw groups. The sample included 90 seventh grade students of S.B.S. Senior Secondary School, Karnal. Pre test-post test control group quasi-experimental design was used. The sample was selected using purposive sampling method. Sample was placed in three
groups viz. EI, EII and control group. EI and EII were taught through STAD and Jigsaw strategies respectively while control group through traditional methods of instruction. The standardised instruments used were Raven’s Standard Progressive Matrices (1997), Socio Economic Status Scale (Meenakshi, 2004), self Concept Inventory Sagar and Sharma, 1968). The data was analysed by using Bartlett’s test, ANOVA and t-test. The researcher also used achievement test, cooperative learning lesson plans, worksheets and formative tests developed by the investigator. The results showed that STAD and Jigsaw strategies were more effective than conventional methods as the mean gain scores of achievement and self concept increased in post tests. Jigsaw method was found more effective than STAD for achievement in Mathematics while there was no significant differences in self concept mean scores of STAD and Jigsaw method.

Vasantraj (2014) studied ‘Effect of cooperative learning model on ninth grade students’ achievement and their attitude towards Geography’. The investigator used Student-Teams Achievement Divisions (STAD) developed by Slavin (1978). The study had pre test-post test quasi-experimental design. The sample had 100 students of G.A. High School, Lingaraj College Campus; belgaon selected using random sampling method. The groups were compared alongwith ability (low, average, high) and gender (boys and girls) with respect to achievement and attitude towards Geography. Researcher used Socio economic status Scale of Upadhyay and Saxena (2008), Raven’s Progressive Matrices (1960), Geography Attitude Scale by Unal Ozdemir (2012) and achievement test developed by the investigator. The statistical tools used were t-test, ANOVA and ANCOVA. Results showed that students with high level ability in experimental group
had higher gain in achievement than control group. The students with various abilities showed increase in attitudes when exposed to STAD method. Boys from experimental group showed increase in attitudes as compared to the girls of experimental group.

1.4 Discussion of Reviews of Research:

This point is studied under

1. Similarities between researches
2. Differences between research
3. Present research differ from other researches

1. Similarities between researches:

The researcher found that researches on cooperative learning through worldwide are very vast and the number goes on increasing day by day. It indicates that there are various aspects of cooperative learning which are still untouchable. The most common researches are on achievement and attitudes. In the present research the researcher touched the effect of cooperative learning on attitudes of B.Ed. trainees. Hence the research is found similar with other most of the researches conducted on attitudes and which are included in review. The research was conducted by using quasi experimental design as like (Glassman and Phyllis, Orlando, Rosini Abu, Akinyemi Akinbobola, zakaria).

2. Differences between research:

While reviewing the researcher found that researches on effect of cooperative learning on adjustment are very rare. But the researcher used this variable for present study. The difference is that the present research was conducted at B.Ed. level as other researches on pre primary, primary and secondary level.
3. Present research differ from other researches:

The review of literatures on cooperative learning reveals that most of the researches conducted on its various aspects but the more common are achievement, attitudes, self-esteem, social skills and process skills. The most common researches are on achievement and attitude (Anderson, Johnson and Johnson, Slavin, Nederhood, Williams, Orlando, Morgon, Watson, Coston, Armstrong, Rosini Abu, Whicker, Ahmadi, Vaughan, Mai Neo, Herbert, Hornby, Scott Johnsen, Patrick, Thurstone, Zakaria, Michael, Naseer Omar, Sonoi Makini and Gulfer Carper) revealed that cooperative learning strategies were helpful in enhancing achievements in various subjects at various levels. Though these studies were included in present research the newness of present study is that these studies were conducted at school and academic college levels only and not at B.Ed. level. These studies valuable guidelines for selection of research design (Glassman and Phyllis, Orlando, Rosini Abu, Akinyemi Akinbobola, zakaria), comparison of attitudes according to gender (Baldwin, Shula G. Ramsay, Akinyemi Akinbobola, Patrick Ajaja), for using STAD strategy (Williams, Orlando, Armstrong, Rosini Abu, Vaughan, Geetha, Michael, Wichadee), comparison of attitudes geographically (Glassman and Phyllis, shula G. Ramsay). The included researches and literatures also encouraged for giving proofs for selection of sample and sampling techniques, research tools and statistical tools. Another newness of the present study is that the researcher developed her own lesson plans on STAD strategy. The researcher also constructed and standardised her tools according to the need of the research.
2.5 Conclusions:

The researchers conducted abroad and in India provide answers to many questions faced by students, parents, teachers and policy makers also. Cooperative learning increases students’ self-esteem and self-confidence. Self confidence in turn gave motivation to students which increase interest and positive attitude towards subject, curriculum and school. Researches on cooperative learning in Indian context are limited; there is much scope for further research in Indian situation. Hence it was an obedient effort to conduct the present research on observing impact of cooperative learning on adjustment and attitudes of B.Ed. college trainees.