CHAPTER I
INTRODUCTION

1.1 Introduction:

Present world is a world of knowledge explosion which is full of innovative ideas and practices. Educational field is an integral part of this world. In today’s education system a common practice is that knowledge is being taught. Students sit passively in the class and waiting for their teachers to impart the knowledge. Hence there is only one way communication due to which the students are not fully prepared for this competitive age. Hence it is said that today’s education system is mechanistic, rigid and directed towards wrote learning only. To overcome this situation there is urgent need to change the education system from quantitative growth to qualitative growth. One of the steps towards changing the present scenario was done by National Curriculum Framework 2005 (NCF 2005). In NCF 2005 there was a shift from behaviourism to constructivism.

In NCF 2005 there is analysis of current educational system. There is description of student’s inactiveness during instruction and how the importance was given to the rote learning. If student accept any information without understanding it cannot be modified into knowledge and such information is not useful for future life. Hence it is necessary to change the current classroom teaching- learning process. This could be possible through constructivist approach. It has been found that use of constructivist approach helps to achieve the educational goals. In this approach it is considered that students’ discover the knowledge and transformed into concepts. The knowledge is then reconstructed and expanded through new
learning experiences. Hence the student constructs his/her knowledge according to their previous experiences and it is the basis of constructivism (Bruner 1973).

One of the main assumptions of constructivism is that every individual interact with his environment since from his birth. Each individual experience things, reacts with them constantly, do wrong things and corrects, observes and make some assumptions and hence interprets his/her own knowledge and this is the basis of constructivism. Constructivism gives information that how the learning takes place.

Merill proposed following assumptions of constructivism.

1. Experience is the basis of construction of knowledge.
2. Learning of an individual takes place independently through external environment by analyzing and interpreting the information.
3. New concepts are formed by interpreting these experiences through active learning.
4. In group interaction an individual explains his concept individually through his understanding.

From above assumptions it is necessary that learning can takes place through cooperation or in group interaction. There are some principles of constructivism which supports the above assumptions related to group learning and these are:

1. Process of knowledge construction enhances through various types of interactions.
2. Process of knowledge construction enhances through cooperation.
Constructivism is not any specific pedagogy; hence it has not any specific teaching method. There are various strategies of constructivist approach and the popular one from these is cooperative learning. Cooperation enhances students’ satisfaction with the learning experiences by actively involving students in designing and complementing class procedures and course content. Constructivists believe that learning of students’ takes place in social setting. Constructivism was studied by various psychologist and educationists. According to Vygotsky learning is not an individual process but it is a social process. The cognitive development of an individual takes place by interacting with others, society and through interaction of language. Hence development of an individual depends upon the surrounding environment and opportunities given during the process of interaction. Therefore it is necessary to give education through interaction, in cooperative environment. Vygotsky proposed the concept Zone of Proximal Development. In this concept he explain that the development of an individual maximized by giving support and guidance. An individual can developed his/her hidden talents with the help of his teachers/elders and expert/talented peers. Vygotsky studied social constructivism and concluded that various social skills and psychological adjustment can be enhanced by using constructivist approach. Fundamental and social needs can be fulfilled through cooperative learning (Johnson and Johnson and Smith 1998). Researches shown that use of cooperative learning changes attitudes of student’s from negative to positive towards the subject (Slavin, Johnson and Johnson, Vaughan). By knowing above benefits of cooperation it is necessary to study the new strategy i.e. cooperative learning strategy.
1.2 Cooperative learning:

Coming together is a beginning

Keeping together is progress

Working together is success – Henry Ford

The independent variable in the present study is cooperative learning strategy. This strategy was developed on the basis of cooperative learning hence it is necessary to know about cooperative learning.

In recent years cooperative learning has become a widely used instructional procedure from preschool to graduate school level in all subject area (Vaughan). Various types of researches are conducted in this area.

Cooperative learning is defined as students working together to attain group’s goals that cannot be obtained by working alone or competitively (Johnson & Johnson and Holubec, 1986).

Cooperative learning is a methodology that employs a variety of learning activities to improve students’ understanding of a subject by using a structural approach which involves a series of steps; requiring students to create analyse and apply concepts (Kagan, 1990).

Cooperative learning is an instructional program in which students work in small groups to help one another to master the academic content (Slavin, 1995).
Cooperative learning is a strategy that develops healthy interaction skills, promotes success of the individual student and group members and forms personal and professional relationships (Johnson & Johnson, 1999).

Cooperative learning is a teaching strategy, with students of different levels of ability in small groups who use various learning activities to improve their understanding of a subject (Wichadee & Orawiwatnakul, 2012).

From above definitions it is concluded that cooperative learning is a teaching strategy which allows students to work together in small groups with individuals of various talents, abilities and background to accomplish a common goal. In this strategy students help each other to learn the material hence each member is responsible for his and others successful learning. Therefore it can be said that cooperative learning is based on the human instinct of cooperation.

In cooperative learning when teacher assign a task, the members of the groups work together towards certain shared learning goals. They helped each other, plan, translate, review, monitor, evaluate, appreciate, and master each other in assigned task. On the basis of performance of an individual or the specific team teacher gave reward.

1.2.1 Historical Background of Cooperative Learning:

Cooperative learning is found to be one of the most research documents in the recent years. The popularity of various websites on cooperative learning indicates effectiveness of cooperative learning. Basically it is a pedagogical approach based on constructivist theoretical perspective. According to this theory student needs to construct their own
understanding of concept. By knowing philosophical, psychological, and theoretical and research base cooperative learning is included in National Curriculum Framework 2005.

There is a rich tradition of cooperative learning. Thousands of years ago Talmud understands importance of learning partner. Socrates taught students in small groups, engaging them in dialogues in his famous “Art of discourse”. Quintillion stated that students benefit from teaching one another. The Roman philosopher Seneca advocated cooperative learning and said “Qui Discet (When you teach you learn twice)”. Comenius (1592-1679) believed that students benefit by both teaching and being taught by other students.

In the late 1700s, Joseph Lancaster and Andrew Bell used cooperative learning to provide education to “masses” in England and India. Lancastrian School was opened in New York in 1806. Benjamin Franklin in Boston gave education in learning groups. Common School Movement in United States in early 1800s stressed on cooperative learning. In last three decades of 19th century, Colonel Francis Parker used cooperative learning in American Education System. In early decades of this century, John Dewey promoted cooperative learning for his project method. Florida Community College at Jacksonville, Michigan State Universities, California State University, etc. extensively used cooperative learning at various levels of education.

The concept of cooperative learning is not new to India. In Indian context concept of peer directed learning is synonymous to cooperative learning. In Mahabharat it is stated as:
It means that 1/4th of education is done by teachers, 1/4th through self and self intelligence, 1/4th through interaction with peers and 1/4th of education through self experience.

In Indian Yogshastra Bhagwan Patanjali emphasized on self realization. He stated that to know ‘self’ it is necessary to know our living and non living thing environment. To know the environment one must realize emotions, cooperativeness and it is a natural process. By studying Yoga one can became happy, balanced, and active and this can be done by making cooperation with one’s mind and with others.

By knowing the effectiveness of cooperative learning NCF 2005 stressed on inclusion of cooperative learning at school level. Cooperative learning is now in D.T.Ed. and B.Ed. level curriculum but with very less weightage. Cooperative learning is an effective source for inculcation of life skills proposed by World Health Organization in 1997. The objectives of becoming India as a Developed Country and to fulfil the dreams of late Dr. A.P.J. Abdul Kalam as stated in India 2020 cooperative skill is useful.

1.2.2 Basic Assumptions of Cooperative Learning:

Following are the basic assumptions of cooperative learning:

1. The cooperative learning ideology is used for making teaching learning process learner centred rather than teacher centred.
2. It is one of the ideologies of constructivism which assumes that students can formulate and construct their knowledge.
3. It shifts the role of teacher from lecturer to facilitator, helping students to construct their knowledge.

4. It emphasize social learning by assuming that learning takes place better in a social situation and group environment rather than in isolation and competitive environment.

5. It believes in cooperation among group learning in place of individual learning and competition.

6. It advocates proper teaching-learning environment instead of mere lecturing and demonstration.

7. It assumes that children learn better in a non-competitive, fear free cooperative environment rather than in a competitive stressful environment as in the traditional classroom conditions.

8. It believes that students learn best when they are totally involved in learning for getting much benefit.

9. It believes that children learn better in a cooperative way from each other on account of the proximity, equality, interdependence and support existing among them instead of the learning thrust upon them by some outside agency, including together.

10. It advocates five essential elements for achieving psychological, social goals like positive interdependence, individual accountability, group processing, social skills and face to face interactions.

**1.2.3 Elements of Cooperative learning:**

Cooperative learning is beyond assigning group work. Cooperative learning is defined in terms of necessary conditions and essential elements which are called as elements or principles of interaction (Johnson and Johnson & Holubec, 1994; Slavin, 1996; Kagan 1997). To implement
cooperative learning the classroom and students in team should be well organised. Cooperative efforts are expected to be more productive under certain conditions. Johnson & Johnson & Holubec, 1994 proposed five essential elements of cooperative learning. These are as follows:

1. Positive interdependence
2. Individual accountability
3. Group processing
4. Interpersonal and Small Group Social Skills
5. Face to face interaction

1. Positive Interdependence:

The first requirement for an effectively structured cooperative learning environment is that students believe they “sink” or “swim” together (Johnson & Johnson & Stanne 2000). It means cooperation occurs only when students realize that the success of one individual depends upon the success of the others. Each individual from group must feel that their group cannot become successful unless he will not contribute in the given task. Students have to learn to work together in order to accomplish tasks. If positive interdependence is present individuals can perform or complete the task within a given limit easily. Students have to work together in order to accomplish tasks. Hence tasks are structured so that students must depend upon one another for their personal, teammates and groups and success in completing the assigned tasks and mastering the targeted content and skills. With the help of assigned material students learn to achieve the goals. Positive interdependence can be assigned into cooperative learning lessons through resources, assigning roles, rewards to supplement goal
interdependence. Each group member has a unique contribution to make to the joint effort because of his or her resources or role or task responsibilities.

2. **Individual and Group Accountability:**

This element leads to the belief that ‘what students can do together today, they can do alone tomorrow’. The purpose of cooperative learning groups is to make each member a stronger individual. Hence the size of the group in cooperative learning is small. Individual accountability can also be viewed through equal participation. Individual accountability exists when performance of each individual student is assessed. Therefore, the group must find out weaker students who need assistance and support to complete the given task. Each student from group tested individually to determine the extent to which he or she has mastered and retained the targeted academic content and abilities. Common ways to structure individual accountability include:

- Keeping the size of the group small.
- Giving an individual test to each student.
- Randomly examining students orally by calling on one student to present his or her group’s work to the teacher (in the presence of the group) or to the entire class;
- Observing each group and recording the frequency with which each member contributes to the group’s work;
- Assigning one student in each group the role of the checker who asks other group members to explain, the reasoning and rationale underlying group answers; and
- Having students teach what they have learned to someone else and when all students do this, it is called ‘simultaneous explaining’.
• Individual accountability can be designed through teaching of social skills, equal participation, taking turns, staying on task responsibility and contributing ideas, assigning roles, division of labour, coding, quizzes and tests

3. Group Processing:

Group processing means the members of the cooperative team think and discuss about their interactions and functioning as a group. The group members discuss how well they are achieving their goals and maintaining effective working relationships. Cooperative team members also describe what member actions are helpful and not helpful. Here the members make decisions about what behaviours to continue or change to enhance their future cooperation. The tools for implementing group processing are lesson plans, questions, talking chips, talking sticks, etc.

4. Interpersonal and Small Group Social Skills:

Social skills are essential factors in cooperative learning in order to achieve the teams target or group goals. Small group discussions provide higher levels of peer to peer interaction and more student participation. In cooperative learning student must be taught social skills. Leadership, decision making, trust building, communication, conflict management, etc. are the most common social skills (Johnson & Johnson & Holubec, 1993). T-charts will be developed to increase social skills.

5. Face to Face Interactions:

When students in teams are engaged in face to face interaction they are very much close to each other to make meaningful eye contact. They are very close to each other to share their common materials and to use group
voices. In face to face interactions students promotes each other’s learning and success. Promotive interaction is characterized by individuals providing each other with efficient and effective help and assistance, exchanging needed resources such as information and materials. Face to face interactions promotes the following:

- Processing information more efficiently and effectively.
- Providing each other with feedback in order to improve their subsequent performance
- Challenging each other’s conclusions and reasoning in order to promote higher quality decision making into the problems being considered
- Advocating the exertion of effort to achieve the group’s goals
- Acting in trusting and trustworthy ways
- Being motivated to strive for mutual benefit
- Maintaining a moderate level of arousal characterized by low anxiety and stress.
- Orally explaining how to solve problems
- Teaching one’s knowledge to other
- Checking for understanding
- Discussing concepts being learned
- Connecting present with past learning

Face to face interaction is designed through organization of classroom arrangement. This can be done by arranging desks clusters to meet a sheet of paper placed at the centre. Johnson suggested that face to face interaction promotes support, maximize opportunities to help each others, encourage and praise to each other.
Teachers who really want to work in cooperative learning group need to seriously ensure that these above principles are essential for necessary outcomes of cooperative learning strategies.

1.2.4 Theoretical Roots of Cooperative Learning:

Cooperative learning is found to be more effective as compared to competitive and individualistic learning. Cooperative learning is the most researched subject at all levels of education and hence this strategy is used all over by the teachers. It is because cooperative learning has strong basis of philosophical and psychological foundation. Following are the some main approaches related to cooperative learning.

1. Motivational perspective
2. Cognitive perspective
3. Social cohesion perspective
4. Developmental perspective
5. Theories of brain related research

1. **Motivational perspective:**

![Fig. 1 Maslow’s Hierarchy of needs](image-url)
Fundamental needs of human being are fulfilled through cooperative learning. According to Maslow’s hierarchy of needs except physical needs all the four types of needs can be fulfilled through cooperative learning. Physical and emotional safety, love and feeling of importance of relationship, experience of self respect and expression of insight abilities, etc. can be inculcated through cooperative learning.

Motivational perspective on cooperative learning focus primarily on the reward or goal structures (Slavin, 1989). In motivational perspective “Cooperative goal structure creates a situation in which the only way group members can attain their personal goals if the group is successful” (Slavin, 1990). One of the elements of cooperative learning is positive interdependence, where students perceive that their success or failure lies within their working together as a group (Johnson & Johnson & Holubec, 1986). Hence in order to attain their personal goals, students are likely to encourage members within the group and help one another to complete the task effectively. In other words, rewarding groups based on group or individual performance creates an interpersonal reward structure in which group members reinforce each others.

2. Cognitive perspective:

There are two cognitive theories that are directly applied to cooperative learning are developmental and elaboration theories Slavin, 1987). Cognitive developmental theory is based on the element i.e. cooperation is essential for cognitive growth. The developmental theory assumes that interaction among students around appropriate task increases their mastery of critical concepts. Lev Vygotsky believed that cooperative efforts such as to learn, to understand and solve problems are essential for
construction of knowledge. Jean Piaget added that when healthy socio-cognitive conflict occurs it creates cognitive disequilibrium which in turn stimulates cognitive development.

The elaboration theory reveals that when students will explain the content to others we can see the effectiveness. Cooperative learning activities enhance elaborative thinking and explanation skill which shows the quality of depth of understanding, the quality of reasoning and the accuracy of long term retention (Johnson and Johnson & Holubec, 1986).

3. Social Cohesion perspective:

Social interdependence exists when the outcomes of individuals are affected by their own and others actions (Johnson & Johnson, 1989). According to Kurt Lewin the interdependence among members results in the group as a dynamic whole. Morton Deutsch expanded Kurt Lewin’s view of positive interdependence in detail. He expanded how the tensions of group members depend on each others. Deutsch also emphasized that in positive interdependence it is essential to cooperate each other in group to achieve the group goal. Thus group members are made interdependent through common goals. Positive interdependence exists when there is a positive correlation among individual’s goal attainments. An individual perceive or attain their goals only if the other individuals are cooperatively linked to attain their goals. Positive interdependence results in promotive interaction which means individuals encouraging and facilitating each other’s efforts to complete their goals. In social perspective it is considered that students help their group students because they care for their group. Social cohesion perspective insists on team building activities in preparation
for cooperative learning and processing and for self evaluation during and after the group activities.

4. Developmental perspective:

The fundamental assumption of developmental perspective on cooperative learning is that interaction among children around appropriate tasks increases their mastery of critical concepts.

Vygotsky’s theory supports the emphasis on social interaction as a vehicle for learning. According to his work, students are able to solve problems cooperatively before them able to solve them on their own. Social interactions involved in group problem solving enable each student to extend his or her zone of proximal development. The opportunity to work with experts is one of the factors that contribute to the ability to solve problems. In small group more expert members helps the weaker member of gaining expertise. The zone of proximal development is the distance between the actual developmental level as determined by independent problem solving under adult guidance or in collaboration with more capable peers (Vygotsky, 1978). In cooperative learning the group activities among the groupmates promotes growth because children of similar ages are likely to be operating within one another’s proximal zones of development modelling in the cooperative group behaviours are more advanced as compared to individuals. According to Vygotsky the communication process, interaction enhances mastery of critical concepts when the interaction happened between a much trained or expert peer. Such types of interactions occur regularly in cooperative groups.
Similarly according to Piaget (1926) social arbitrary knowledge has five important aspects like language, values, rules, mortality and symbol systems. These can be learned only through interactions with each others. There is great scope for interactions among the groups in cooperative groups. In cooperative learning group students will learn from one another because in their discussions of the content cognitive conflicts will arise, inadequate reasoning will be exposed, disequilibrium will occur and it increases the quality of understanding of the content.

5. Brain related research:

Brain related research showed that brain cannot handle/manipulate any subject if there is no physical and emotional safety and security. In a safe and secure environment, friendly relationships with peers and lovable and careful teacher brain can perform higher order thinking processes. Brain can store the information in long term memory when the knowledge is gained in healthy and joyful environment. In cooperative groups when the peers teaches the content to others, make corrections at that time there is deep and detailed brain processing on information and the quality of learning increased.

1.2.5 Cooperative Learning Methods:

Cooperative learning is one of the widespread and fruitful areas of theory, research and practice in education. Now a day modern cooperative learning is a widely used instructional strategy from KG to PG. Cooperative learning instructional strategies are used in all subject areas, in non-traditional and traditional learning situations. The widespread use of cooperative learning is due to three main factors viz.
• It is based on theory.
• It is validated by research.
• It is operationalized into clear procedures educators.

The third factors i.e. there are various learning methods available for the teacher which he or she can select depending upon their need. Cooperative learning has several techniques for promoting an educational experience that facilitates students to move beyond standard classroom parameters (Fantuzzo, Ginsburg-Block, Miller, & Rohrbeck, 2003). There are number of researches that have developed cooperative learning strategies or procedures. The following are most common. Table 1.1 is showing the modern methods of cooperative learning.

Table 1.1

<table>
<thead>
<tr>
<th>Researcher</th>
<th>Date</th>
<th>Method</th>
</tr>
</thead>
<tbody>
<tr>
<td>Johnson &amp; Johnson</td>
<td>Mid 1960s</td>
<td>Learning Together &amp; Alone</td>
</tr>
<tr>
<td>De Vries &amp; Edward</td>
<td>Early 1970s</td>
<td>Teams Game Tournament (TGT)</td>
</tr>
<tr>
<td>Sharan &amp; Sharan</td>
<td>Mid 1970s</td>
<td>Group Investigation (GI)</td>
</tr>
<tr>
<td>Johnson &amp; Johnson</td>
<td>Mid 1970s</td>
<td>Constructive Controversy</td>
</tr>
<tr>
<td>Aronson &amp; Associates</td>
<td>Late 1970s</td>
<td>Jigsaw Procedure</td>
</tr>
<tr>
<td>Slavin &amp; Associates</td>
<td>Late 1970s</td>
<td>Student - Teams Achievement Divisions (STAD)</td>
</tr>
<tr>
<td>Cohen</td>
<td>Early 1980s</td>
<td>Complex Instruction (CI)</td>
</tr>
<tr>
<td>Slavin &amp; Associates</td>
<td>Early 1970s</td>
<td>Team Accelerated Instruction (TAI)</td>
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</tr>
<tr>
<td>Kagan</td>
<td>Mid 1980s</td>
<td>Cooperative Learning Structures</td>
</tr>
<tr>
<td>Stevens, Slavin &amp; Associates</td>
<td>Late 1980s</td>
<td>Cooperative Integrated Reading &amp; Composition (CIRC)</td>
</tr>
<tr>
<td>Kagan</td>
<td>Early 1990s</td>
<td>Three Step Interview</td>
</tr>
<tr>
<td>Kagan</td>
<td>Late 1980s</td>
<td>Inside Outside Circle</td>
</tr>
</tbody>
</table>

Different cooperative learning methods are used and advocated to use according to the situation. The idea which lies beneath all cooperative learning methods is that students’ works together to learn and are responsible for one another’s learning as well as their own (Slavin, 1994). Some of the following strategies are discussed here.

1. **Learning Together:**

    Johnson and Johnson in 1975 developed this strategy. There are 4-5 member heterogeneous groups working on assignments. The groups are working on a single assignment and receive praise and rewards based on the work done in the group. This method emphasizes team building activities before students begin working together and engage in regular discussions within groups about how well they are working together.

2. **Jigsaw:**

    The social psychologist Aronson and his colleagues developed this strategy in 1978. In the original Jigsaw method, six member of students assigned in a group to work on academic material, which is broken down into sections and each team member separately work on assigned section.
Members of different teams who have studied the same sections meet in 'Expert groups’ to discuss their sections.

**Jigsaw II**

This modification was developed by Robert Slavin (1980b). In this method, competition occurs between learning teams who compete for specific group rewards which are based on individual performance. Points are given for the team by each student improving his/her performance relative to his/her performance on previous quizzes. Also, all students read a common narrative and then each is assigned a topic upon which to become an expert. This version saves the teacher from having to prepare different sets of reading materials.

**Jigsaw III**

This method is developed by Kagan, and it is used in bilingual classrooms. Cooperative groups consist of one English speaker, one non-English speaker, and one non-English speaker, and one bilingual student.

3. **Group Investigation:**

Group Investigation method has been developed by Sholmo Sharan in 1984 at Israel in University of Tel-Aviv. Hence it is also named as Sholomo Sharan method. It is structured for higher order thinking skills like analysis and evaluation. In this method one unit is selected for the class and it is distributed to teams by breaking into sub units. These sub units are again divided into small units and each member from the group work on it. Each group prepare its own report on that sub unit and presented the conclusions or results in front of the whole class. Depending upon the quality of the report evaluation of each group was done. Small groups decide what to investigate, what contributions each member will make and how to communicate what they have learned.
4. **Student Team Learning:**

Slavin and his colleagues at John Hopkins University developed some strategies of cooperative learning. These strategies combined are called as Student Team Learning. In Student Team Learning, the students’ tasks are to learn something as a team. The elements of this strategy are team rewards; individual accountability and equal opportunity for success. There are four main types of Student Team Learning.

**A) Team Games Tournament:**

Slavin developed this strategy in 1985. The groups are heterogeneous and members differ in their quality. Each group member from a group help the another member of the same group to master the content and compete the other group. Students discuss on the learning material given by the teacher and also ask questions to work collectively and effectively in a group. Weekly tournaments are organised in which students compete with members of other teams to contribute points to their team scores. The winner at each tournament table brings the same number of points to his or her team, regardless of which the table it is. In this method there is competition between the students with same achievement scores and hence there is equal opportunity for students of lower and higher achievement.

**B) Student-Teams Achievement Divisions (STAD):**

This method was founded by Slavin and De Vries in 1978. In STAD (Slavin 1986), students are assigned to four member learning teams heterogeneously mixed along performance level, ability, sex and ethnicity. It has five components: Class presentation, team selection, quizzes, individual improvement scoring system and team recognition. STAD
requires students to complete a common worksheet in groups of four or five but to take individual tests. The teams score is the result of individual students’ improvement over past performance. It is widely used for various subjects like social studies, languages, arts and from KG to college level.

C) Team Assisted Individualisation (TAI):

TAI is a combination of cooperative learning and individualized instruction. This is founded by Slavin et.al; in 1986. It is structured by mixing STAD and TGT in which heterogeneous teams and reward is given to high performing games. In TAI, a student enters an individualized sequence according to a placement test and then proceeds at his/her rate. Team members work on different units. Team members evaluate each other’s and help to solve problems. Final test was conducted where teammates individually complete their tests. At the end of the week teacher combined the scores of each student from respective team and awards to teams.

D) Cooperative Integrated Reading and Comparison (CIRC):

CIRC is developed for higher order primary problems. In CIRC the heterogeneous group comprises four students with different capabilities. They co-operate with each other in reading to each other, summarizing to each other, practising spellings and vocabulary, etc. Evaluation is done on the basis of performance of the whole group and certificates are given to the teams. CIRC is used for developing writing and reading skills of students.

5. Think Pair and Share (TPS):

Andrini developed this model in recent years in 1994. In this model students listen to a question or presentation and think individually, talk with each other in pairs and finally share their responses in front of the class. This
model involves steps like listen, think, pair and share and hence also named as Listen Think Pair and Share.

6. Complex Instruction:

Cohen developed this method in 1998. This strategy is developed specially for bilingual Spanish students. The students are provided with a set of active cards, students experiment, and measure and solve the problem.

7. Turn to Your Neighbourhood (TYN):

In this strategy student makes pairs to discuss their ideas. Teacher told the students to discuss about their work and communicate with the whole class.

8. Pairs of Pair (PP):

Students made a list of responses for a specific sentence or question. At first two students in pair gives a list of responses for a question and then by making two pairs list a new list is formed.

9. Inside Outside Circle (IOC):

Students from a class stand in pair in a circle which has a single centre. The student from inner and outer circle faces each other’s and gives answers to questions asked by the teacher.

1.2.6 Student-Teams Achievement Division (STAD) As Cooperative Learning Strategy in Present Research:

In the present research the researcher used Student-Teams Achievement Division as a cooperative learning strategy. STAD as a cooperative learning experiment was designed and researched by John Hopkins University and is known as ‘Student team Learning’ (Sharan, 1994).

The cooperative learning strategy that has been extensively researched and assessed specifically on academic achievements, attitudes,
social interactions and interpersonal relationships is the Student- Teams Achievement Divisions (Slavin 1983, 1990; Kagan, 1994; Johnson & Johnson, 1984; Johnson et.al 1999; Balfakih 2003; Bernaus & Gardner, 2008; Tarim & Akdeniz, 2008). STAD is one of the simplest and most extensively researched forms of all cooperative learning techniques and it could be an effective instrument to begin with for teachers who are new to the cooperative learning technique (Slavin, 1990; Becker and Walts, 1998). Research studies in the use of STAD as a teaching strategy has been applied with great success in various research projects (Vaughan 2002; Jacobs et.al.2003, Van Wyk, 2010). The main purpose of STAD is to drastically improve the learner’s performance. According to Slavin (1994) the main idea behind STAD is to motivate students to encourage and help one another master skills presented by the teacher.

STAD strategy is based on group contingency and vicarious reinforcement. According to Slavin (1987) group contingency means ‘the behaviour of one or more group members brings rewards to a group’. Group contingencies motivated students to work hard and successfully in the team. Vicarious reinforcement (Bandura, 1971) means students learn not only by rewarding or punishing but also by seeing other students receive rewards and punishment for their behaviours. In heterogeneous groups of cooperative learning there are various opportunities for students to experience positive models that students are rewarded for their efforts.

There are intrinsic and extrinsic motivations in STAD for student’s efforts. Intrinsic motivation flowed from within a person and extrinsic motivation came from outside person (Slavin, 1987). Slavin insist on extrinsic motivation for enthusiastic behaviour in cooperative learning.
In STAD students are assigned in 4-5 member learning teams with a variety of performance level, gender and ethnicity. Class presentations, team study, quizzes, individual improving scores and team recognition have made the five major components of STAD (Slavin, 1995).

The presentation of the material, in a lecture-discussion format starts the teaching phase. The researcher told the trainees what is they are going to do and what is its importance. The students were provided with worksheets and answer sheets. The group members work cooperatively during team study followed by an individual trainee quiz (exercise). But at the same time each trainee could contribute to a group score by making improvements. Each trainee’s grade was based on his or her own last performance and how well they did on the quiz as compared to their average score on past quizzes. Thus a relatively low achiever can contribute as much to their team as a high achiever without doing as well on the quiz as their higher achieving teammate. The group score was used to determine which groups receive rewards, such as certificates or recognition in bulletin boards or newsletters. The rewards are based on the average number of points scored by each team such as super team certificate, great team certificate and good team certificate.

Slavin as stressed on group contingencies at the same time also gave importance to humanistic perspective. The humanistic perspective focused on affective benefits of cooperative learning like self esteem, improved ethnic relations. Slavin’s conclusion is that ‘Cooperative learning represents an odd but happy marriage between behavioural and humanistic approaches to classroom motivation” (Slavin, 1987).

The cooperative group works effectively when the teacher assigned roles to the students. Roles and changes in roles in the group was shown on
a chart and fixed on a wall to tell the trainees for which role they are selected. Trainees in each group should know the importance of five roles (Wheeler, 1990; mills, 1996) as described in Table 1.2. Table 1.2 is showing the roles and activities in a cooperative group.

**Table 1.2**

**Roles and Activities in a Cooperative Group**

<table>
<thead>
<tr>
<th>Sr. No.</th>
<th>Role</th>
<th>Activity</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Facilitator</td>
<td>A facilitator is responsible for keeping the group on the assigned task and making sure that all members of the group have an opportunity to participate, learn and respect their team members.</td>
</tr>
<tr>
<td>2.</td>
<td>Recorder</td>
<td>A recorder is responsible for searching and maintaining the group and keeping records of all group activities. The recorder writes out the solutions to problems for the groups to use as notes, or to submit to the instructor.</td>
</tr>
<tr>
<td>3.</td>
<td>Timer</td>
<td>A timer is responsible for making sure that the group’s work area is left the way it was found and acts as a time keeper for activities.</td>
</tr>
<tr>
<td>4.</td>
<td>Material Manager</td>
<td>A material manager is responsible for getting the material from the teacher and giving it to the group.</td>
</tr>
</tbody>
</table>
A encourager is responsible for acting as an assistant to the facilitator as group leader, and assumes the role of any member that may be missing.

STAD has five components: Class presentation, Teams, Quizzes, Individual improvement and Team recognition.

a) **Class presentation:**

The material to be learnt is initially presented by the teacher to the whole class or in an audio-visual presentation.

b) **Teams:**

Teams composed of 4-5 students are carefully selected to represent a cross section of the class. The teams are as heterogeneous as possible with regard to sex, ability level, faculty and region of students. The team member’s work together is a peer-tutoring format to master the material of the learning unit. Most often the team members quiz each other, working from worksheets and consist of problem and/or information to be mastered.

c) **Quizzes:**

The students are evaluated via individual quizzes that assess individual achievement on the material presented in the class and practised in the teams.

d) **Individual improvement:**

A detailed scoring system that allows the students to learn points for their teams based on their improvement over a running average of already existing past scores. The scoring system is based on a periodically
readjusted “base score” for each student; each student earns points for his/her team based in improvement over past performances.

e) Team recognition:

The teacher use newsletters, bulletin boards or other forms of social recognition and rewards for teams showing high individual weekly performance and/or high cumulative standings. Recognition is provided well or who are the most improved.

1.2.7 Steps of Cooperative Learning:

Foyle and Lyman suggested following steps to implement cooperative learning successfully.

1. Deciding the subject and the unit/content and develop criteria for mastery.

2. To decide useful strategy for selected unit and deciding number of sub units. According to Johnson and Johnson experiment or method will be successful when the unit is smaller.

3. Deciding number of students in a group and sending them in respective groups.

4. To construct the class neatly for healthy group processing.

5. To instruct students about group norms and group processing.

To maintain balance between groups and group processing it is necessary to instruct the students about cooperative learning and how to work in cooperative groups.

6. Teacher must clarify whether each student understand the aims of cooperative learning. Teacher has to tell the students time limit for any work.
7. Teacher must provide all the necessary primary material to the students.

8. Teacher has to observe the group processing and help and explain students wherever necessary. Hence role of teacher is as an instructor and facilitator.

9. Teacher has to evaluate students’ learning. Student must direct individually the learnt concepts and its important mastery skills.

10. Awarding rewards for better performance of groups. Teacher praise verbally, display names of highest achieving groups on bulletin boards for encouraging students for their better performance.

1.2.8 Benefits of Cooperative Learning:

Cooperative learning is an instructional strategy in which students work together in structured small groups and students collaborate in order to reach a common goal. Positive interdependence, face to face interactions, group processing, individual accountability and social skills are the essential elements of any cooperative learning (Johnson and Johnson).

Johnson and Johnson and Stanne conducted above 900 researches on cooperative learning and found three main outcomes of their researches as:

1. Students have to make efforts to learn and hence achievement and productivity increases:

   In a group students are of different abilities and still they are interacting with each others. It increases intrinsic motivation, work for a longer time for learning, increases higher order thinking skills, logical and critical thinking. This in turn increases productivity and retention of the content.
2. Development of interpersonal relationships:

In a cooperative group students learn how to make relationships, how to work effectively, committed, giving support to each other, work collectively for success, helps one another to learn the content. Students discuss the content, put their views, appreciate others, listens calmly others views. This enhances friendly relationships with peers. It develops positive attitudes towards schools, colleges, curriculum, subject and teachers.

3. Helps to enhance psychological health:

Cooperative learning develops positive attitudes towards subject (Johnson & Johnson, Wichadee, Vaughan). It helps students for development of social adjustment, personal adjustment, social skills, self esteem, and self awareness and gives confidence to face stressful conditions. It also helps to develop self confidence and make person adjustable with others and the environment.

Cooperative learning works because human beings are social animals. This assumption is supported by naturalistic observation. Interacting with others, discussing ideas with others and comparing and contrasting our ideas with others contribute to greater learning of content.

Johnson & Johnson & Smith (1998) investigated that college students learning cooperatively perceive greater social support both academically and personally. They work on students from different ethnic, cultural, language, social class, ability and gender groups. They increase the quality of social adjustment to college life, continued attendance, reduce uncertainty about attending college, increase commitment to study in college, increase integration into college life, increase interest in college and curricula and heighten social membership in college.
Cooperative learning increases psychological adjustment. One important aspect of psychological health is self-esteem. College level studies indicates that cooperation enhances higher self-esteem than competitive (0.47) and individualistic (0.29) efforts. Researchers showed that attending college enhances personal adjustment, attitudes self-esteem and social skills.

Researches on attitude towards college experience indicate that attending college regularly promotes more positive attitudes towards learning subject (Johnson & Johnson, Anderson, Williams, Whicker, Vaughan, Gulfer Carper, etc.). Researches also proved that students’ values, attitudes and behavioural patterns get positively modified in cooperative learning groups. Cooperative learning promotes positive attitudes towards subject matter. Cooperative learning strategies improved students’ academic achievement, attitude towards self, peers and subject (Johnson, 1973). When the students get success they view the subject matter with very positive attitudes because their self-esteem is increased. Cooperative learning enhances students’ satisfaction with the learning experience.

Cooperative learning has the largest base of any current educational innovations at theoretical, application and evaluation level (Ellis and Fourt, 1997; Friedman and Fisher, 1998). Research documents shows effectiveness of cooperative learning in cognitive, affective and interpersonal domains.

Cooperative learning has been successfully used at all levels of education in various subjects from KG to PG. Researches in various subjects shows that cooperative learning is effective in achieving needs of culturally diverse learners, disable learners. Students make progress in academics, social skills and acceptance of diversity.
Following are some benefits of cooperative learning:

1. It promotes thinking skills.

   Panitz (1996) stated cooperative learning enhances critical thinking skills. While working in groups students gives clarification and explanation of their answers which in turn increases higher order thinking skills. Johnson (1973) also indicates there is discussion and debate on ideas proposed by students and it will increase critical thinking skills. Peterson and Swing (1985) found that immediate feedback and questions are asked to the participants and students become active throughout the whole learning in cooperative groups.

2. It promotes communication skills.

   Communication skills are essential in achievement of the student. Cooperative discussion improves student’s recall of text content. The critical and communication skills increases their retention and interest in the subject improved (Kulik and Kulik, 1979).

3. It involves students actively in the process of learning.

   Slavin (1987) stated cooperative learning creates an environment of active, involved, exploratory learning. Involving students actively in learning encourages students’ responsibility in learning (Baird and White, 1984). Promotive interaction one of the principles of cooperative learning builds students’ responsibility towards group and students actively participate in activity.

4. It models appropriate student problem solving techniques.

   Cooperative learning fosters modelling of problem solving techniques by students’ peer (Schunk and Hanson, 1985). Students like to learn from peers rather than their teachers (Levin, Glass & Meister, 1984). Students helps one another in learning the content and it is their
responsibility for their as well as group’s success and hence share their knowledge with peers (Bargh & Schül, 1980). In cooperative learning the groups are heterogeneous; the high achievers helps low achievers, shy students find solutions to their problems in cooperative groups because cooperative learning provides safe environment for exploration.

The research on cooperative learning is like a diamond. The more light you focus on it, the brighter and more multifaceted it becomes. The power of cooperative learning is brightened by the magnitude of its effect sizes, but the more you read the research and examine the studies, the better cooperative learning looks (Johnson & Johnson & Smith, 1998).

By knowing all above benefits of cooperative learning researcher was impressed by this method and hence wants to know the effectiveness of this method. Hence the researcher studied cooperative learning as one of the variable for present research.

1.2.9 Limitations of Using Cooperative Learning in Class:

Following are the limitations of cooperative learning.

1. Teachers do not use cooperative learning as they are not oriented or trained for cooperative learning in D.T.Ed. / B.Ed. course.
2. Teacher’s reluctance to change and innovate.
3. Teachers fear that they loss the control over the class and authority will make them responsible for this and will be punished for this.
4. Teachers fear that students will waste their time in setting cooperative structure.
5. Teachers fear that content cannot be taught effectively through cooperative learning.
6. Student’s has the habit of seeing their teachers as experts and learn from teachers.

7. It is difficult for students to feel their individual accountability for success of group in cooperative learning.

8. Learning to facilitate cooperative learning expertly requires training, experience and perseverance. Instructor must use the strategy routinely.

9. Learners are of different learning styles. Sometimes learners argue or refuse to work in group and like to work individually.

10. Cooperative learning takes much more time than other traditional methods of instruction and hence the syllabus cannot be completed in specific time limit.

11. Cooperative learning does not work in easy lessons.

12. Conflicts may arise in group processing for which instructor may not be prepared.

13. Working in cooperative groups creates noise which is uncomfortable for some other instructors in the school.

1.3 Attitude:

One of the objectives of teacher education programme is to develop positive attitude or favourable attitude towards teaching in prospective teachers. The Education Commission (1996) had also pointed out, “Methods of teaching and evaluation in training institutions are extremely important and the attitude of student teacher will be influenced more by the methods used with them, than by what they are formally taught about the methods they should use in schools”.
Above words shows importance of teaching methods and attitudes. Researches constantly shows that active, learner-cantered approaches results in developing positive attitude towards the task, subject, behaviour, etc. Attitudes ones formed, can shape the way students think, understand, feel and behave. The evaluation of student’s attitude may provide new insights into the way these attitudes may higher or facilitate learning. Hence it is necessary to study student’s attitudes.

1.3.1 Concept of Attitude:

The word ‘attitude’ is defined within the framework of social psychology as subjective or mental preparation for action. It defines outward and visible postures and human beliefs. Attitudes determine what each individual will see, hear, think and do. They are rooted in experience and do not become automatic routine conduct.

Attitude means the individuals prevailing tendency to respond favourably or unfavourably to an object (person or group of people, institution or events). Attitudes can be positive (values) or negative (prejudice). The concept of attitudes is perhaps the most widely discussed topic in social psychology.

Thurstone (1946) defines attitude as “The sum of total man’s inclinations and feelings, prejudice or bias, preconceived notions, ideas, fears, threats, and convictions about any specific topic”.

Sheriff (1956) sees an individual’s attitude as “A set of categories for evaluating or judging various social stimuli- persons, objects, events, etc. Further that his social attitudes are learned and established through social interaction and that they are a matter of degree, rather than being all or none, positive or negative”.

According to Freeman (1965) “Attitude is a dispositional readiness to respond to certain situations, persons, objects or ideas in a consistent manner which has been learned and has become one’s typical mode of response”.

According to Anastasi (1968) ‘An attitude is often defined as a tendency to react favourably or unfavourably towards a designated class of stimuli, such as national or racial group, a custom or an institution. Thus, defined, attitudes cannot be directly observed but must be inferred from overt behaviour, both verbal and non-verbal”.

Gagne (1979) defines attitudes as an internal state that influences the personal actions of an individual.

Attitudes are acquired through learning and can be changed through persuasion using variety of techniques. Attitudes ones established, help in shape the experiences the individual has with object, subject or person. Although attitude changes gradually, people constantly form new attitudes and modify old ones when they are exposed to new information and new experiences (Adesina and Akinbobola, 2005).

A broader definition of attitude was proposed by Wenden (1991). He stated that the expression ‘attitudes’ included three significant parts viz. Cognitive, affective and psychomotor. The cognitive part consists of the thinking and dreams or views and beliefs about the object of the attitude. The affective part refers to the sentiment and feelings or emotions that one has ‘for’ or ‘against’ the object. The psychomotor part refers to the actions or overt attitudes for or against the object.

Social psychologists distinguish and study three components of responses (attitudes):

a. Cognitive component- It is knowledge about an attitude object, whether accurate or not,
b. Affective component- It is knowledge about feelings towards the object.

c. Cognitive or behavioural component- It gives knowledge about the actions taken towards the object.

Baysal (1981) also defined attitude and studied three components- cognitive, affective and behavioural. He expressed that attitudes are formed depending upon the experience, knowledge and environment of an individual.

Mc Guire (1969) cited in Oscamp (1977), that if we look at all the components from different angle, we may find that all the three are very closely connected and we cannot distinguish between these three components.

1.3.2 Characteristics of Attitude:

With the help of above definitions we can interpret some characteristics of attitudes as:

1. Attitudes are related to any object, subject or persons.
2. Individual is prepared to give responses due to attitudes.
3. Attitudes can be measured.
4. Attitudes give specific direction to an individual’s behaviours.
5. Attitudes are not inborn but can be achieved or acquired.
6. Cognitive, affective and psychomotor (behavioural) are three components of attitudes.
7. These three components are intermixed and cannot be distinguished. These three components make a system which is permanent.
8. Attitudes are learned. They are neither part of the physiological system, nor they inherited.
9. Attitudes are referents and related to objects, people, ideas, events, etc.
10. Attitudes are social learning. They are gained in interactions with people.
11. Attitudes vary in intensity.
12. Attitudes are effective.
13. Attitudes have a time dimension and a duration factor.
14. Attitudes are complex.
15. Attitudes are adopted also from family, friends, schools, colleges, universities.
16. Attitudes are formed due to the process of differentiation.

1.3.3 Factors Influencing Attitudes:

Attitudes are not inborn. They can be acquired through training. Development of attitude involves internal and external factors. Internal factors include an individual’s personality characters and personality while external factors includes socio-cultural environment. Socio-cultural environment includes family, peer group, reference group, information, etc. Attitudes are influenced by peer opinions and values (Baysal, 1981).

Attitudes are not static but can be changed. Change in attitude of an individual depends upon needs, motivation and his/her personality character. Researches on communication show that attitudes can be formed through effective communication. Effective communicator includes teachers, speakers, writers, advertisers, etc. plays Effective communication depends upon communicator, message, medium of communication, feelings of audience, physical environment and other people (Carl Hevland).
There are various theories regarding formation of attitudes like functionalism, cognitive theory, historical and economic theory and learning theory. According to learning theory as concepts, habits and thinking systems are not natural but they are acquired like these attitudes are also formed through experience (Byrne, Bandura). To explain formation of attitudes Bandura gave explanation of concepts like modelling, imitation, reinforcement, etc. They prove that how the principles of learning are applicable to see attitude formation.

1.3.4 Measurement of Attitudes:

The measurement of attitude includes direction, degree and intensity. Attitudes can be measured through various techniques like attitude scales, paired comparison, free-response technique, opinion polling, anecdotal records, autobiographies, etc.

In the present study attitudes of B.Ed. trainees are measured by attitude scale. Attitude scales are designed to provide quantitative measure of the individual’s relative position along a one-dimensional attitude continuum. They give a score based on the individual’s responses to a series of questions or sentences regarding the issue under consideration. In the construction of attitude scale, different questions or sentences regarding the issue are designed to measure a single attitude. Following four types of scales are used in attitude testing.

i. Thurstone type scales
ii. Likert type scales
iii. Standardise scales
iv. Guttmann scales

In the present research the researcher used Likert type scales. Researcher prepared attitude scale towards the subject Instructional Design.
In Likert type of scales the response is usually expressed in terms of the five categories- Strongly Agree (SA), Agree (A), Undecided (UD), Disagree (D) and Strongly Disagree (SD). The individual statements are either clearly favourable or unfavourable. To score the scale, the alternative responses are credited 5, 4, 3, 2 & 1 respectively from the favourable to the unfavourable end. For example “Strongly Agree” with a favourable statement would receive a score of 5, as would “Strongly Disagree” with an unfavourable statement. The sum of the item credits represents the individual’s total score; which is interpreted in terms of empirically established norms.

1.3.5 Cooperative Learning and Attitudes:

Attitudes have been influenced by the education process through planned and random experiences. Since creating and shaping attitudes is one of the most important functions of the schools and colleges. None is born with any attitude but are learned in a culture and in course of individual development. An individual’s environment in which he grows affects on attitudes. Like interests, attitudes influence the behaviour of an individual by making selectively oriented towards certain objects and issues. Depending upon the nature of his/her attitudes he/she reacts favourably or unfavourably.

Attitudes are changed by school experiences. They may be changed by the influence of a particular teacher, another child, the peer group, a single event, curricular method and material, a series of extracurricular activities, etc. Children are taught to be cooperative and at the same time placed in competition with each other.

Attitude is defined as a way of thinking or feeling about something. While working with students, their attitude can play an important role in the
learning process. If a student feels that he/she can do well and get success, then usually he/she will be successful. However, if a student feels that he/she cannot do the required work then he/she will do not work hard for success. Cooperative learning is a tool which can help to develop positive attitude towards learning. Gagne (1979) considers attitudes as mental and neutral state of readiness, organized through experience, exerting a directive or dynamic influence upon the individual’s responses to all objects and situations with which it is related.

Bernero (2000) stated that those students who struggled with Mathematics continued to struggle and became frustrated with individual work, but improved both academically and in self confidence, when came to group work in cooperative learning situation. Students working cooperatively enjoy learning and get socially adjusted and believe that their classmates like them. This perception in turn increases student’s self-esteem (Walmsley, 2003). Schunk and Hanson (1985) suggest that attitudes of student’s play significant role in Science subject. Ogunleye (1993) reports that many students developed negative attitudes towards subject due to insufficient aspiration or goals from teachers. Alao (1990) showed there is positive correlation between attitudes and performance in Science subject. According to Johnson & Johnson (1989), cooperative learning enhances positive attitude towards instructional experience than competitive or individualistic methodologies.

By knowing above results of cooperative learning to change attitudes of student’s towards subject the researcher selected attitude as dependent variable. In the present research the researcher studied the effect of cooperative learning strategy STAD on attitudes of B.Ed. college trainees towards the subject Instructional Design.
1.4 Adjustment:

Adjustment is a commonly used word in daily life. Life is full of challenges. For survival of an individual every person faces these conditions and satisfies their needs in a specific manner. This strategy to fulfil one’s needs is called as adjustment. According to Darwin’s theory of evolution (1859), those species which adapted successfully to the demands of living, survived and multiplied while others who did not, died out. Therefore the adaptation or changing of oneself or one’s surroundings according to the demands of the external environment became the basic need for our survival.

Good adjustment is essential so that an individual grows fully and also contributes to the society. A well adjusted person possesses good physical and mental health and maintains balance between his biological, psychological and social needs.

1.4.1 Concept of Adjustment:

The word adjustment is always used in the field of Psychology, Sociology and Education.

The dictionary meaning of the word ‘adjustment’ is to fit, make suitable, adapt, arrange, modify, harmonize or make correspondent. Thus when we make an adjustment between two things, we adapt or modify one or both of them to correspond to each other.

According to Webster (1951) “Adjustment is the establishment of a satisfactory relationship, as representing harmony, conformance, adaptation or the like.

According to James Drever (1952) ‘Adjustment means the modification to compensate for or meet specific conditions’.
Similarly Good (1959) defines adjustment as “The process of finding and adopting modes of behaviour suitable to the environment and to the changes in the environment”.

Shaffer (1961) said “Adjustment is the process by which a living organism maintains a balance between its needs and the circumstances that influence the satisfaction of these needs. The individual tries to bring about changes in his circumstances in order to overcome the difficulties in the fulfilment of his needs. He tries to maintain a balance between his needs and his capacity of realising these needs and as long as this balance is maintained he remains adjusted. Adjustment enables person to change his way of life according to the demands of situation and give him strength and ability to bring about the necessary changes in the condition of his environment.

In addition to his own basic needs an individual have to fulfil the needs of the society. If he thinks only about his personal needs without thinking the norms, ethics and cultural traditions of society, he will not be adjusted to his environment. Adjustment does not cater only to one’s own demands but also to the demands of the society. Hence a well adjusted person is that who can adjust with self, environment and the society.

1.4.2 Characteristics of Adjustment:

From above definitions following characteristics of adjustment can be illustrated:

i. Adjustment is the process of interaction between individual, self and his environment.

ii. The self and the environment both always changes.
iii. Adjustment is a continuous process and is not static. It never completes but attempts to encounter new problems in every changing life situations.

iv. Adjustment enables the person to satisfy his needs, maintain harmony with the environment.

v. Adjustment behaviour is determined by social and cultural value.

vi. Adjustment pattern is unique for individuals, depending upon their personality.

vii. Adjustment gives strength and ability to bring desirable changes in the conditions of one’s environment.

1.4.3 Process of Adjustment:

The process of adjustment means examining how one can fulfil his needs and cope up with the frustrating situations. The process of adjustment involves four aspects as

i. Existence of a motive

ii. Obstacles

iii. Varied responses

iv. Success/Goals

There are biological, psychological and social motives in life of human beings. A person always tries to satisfy these motives. If these motives are immediately satisfied a person becomes adjusted. But the motives are not satisfied they are always blocked by some obstacles. It is the habit of each individual to overcome these obstacles and to reach the goals. If an individual overcome the obstacles he achieves adjustment. In another situation, the individual revise his plan, changes the goal and succeeds to reach the goal of adjustment. Besides the above two forms
of adjustment there is another third possibility also. If a person is not able to overcome these obstacles gets frustrated. Sometimes frustration leads to maladjustment which may be minor or major. The efforts which cause success get reinforced and continued and the person adopts them as his pattern of adjustment and habit.

1.4.4 Areas of Adjustment:

Adjustment in the case of an individual should consist of personal as well as environmental components. The aspects of personal and environmental components are again categorizes into different aspects and dimensions to measure adjustment of an individual. Bell (1958) has taken five areas in his adjustment inventory like: home, health, social, emotional and occupational. Joshi and Pandey (1964) had given eleven areas of an individual’s adjustment like: health, finance, social, marriage, personal, home, educational, school and college work, teaching and curriculum, religious and psychological. Adjustment inventory prepared by Palsane M.N. (1977) considered home, family, social, personal, emotional, educational and health as areas of adjustment.

In the present research the researcher constructed adjustment inventory and it possess personal, social and educational components. It is prepared by taking guidelines from Bell’s adjustment inventory and Palsane’s adjustment inventory.

1.4.5 Measurement of Adjustment:

Measurement of adjustment includes various tools like projective techniques, sociometric techniques, scaling techniques and inventories.

The inventory techniques effectively can measure adjustment of an individual. In ordinary sense, an inventory is a self reporting questionnaire
that deals not only with overt behaviour but also with the person’s own feelings about himself, other persons and his environment, resulting from introspection. In this way one can collects information about any person’s adjustment with the help of inventory. Inventory technique is more popular than any other technique of measurement of adjustment because it gives results from both conscious and unconscious level. All areas of adjustment can be measured through inventories.

In the present research the researcher prepared adjustment inventory by using Likert method. The inventory consists of personal, social and educational areas of adjustment. The response is usually expressed in terms of the five categories- Strongly Agree (SA), Agree (A), Undecided (UD), Disagree (D) and Strongly Disagree (SD). The individual statements are either clearly favourable or unfavourable. To score the scale, the alternative responses are credited 5, 4, 3, 2 & 1 respectively from the favourable to the unfavourable end. For example “Strongly Agree” with a favourable statement would receive a score of 5, as would “Strongly Disagree” with an unfavourable statement. The sum of the item credits represents the individual’s total score; which is interpreted in terms of empirically established norms.

1.4.6 Cooperative Learning and Adjustment:

According to Carolyn Tryon “The conditions of good mental health require that the school create a situation for all-day-long where good relationships between child and child and between teacher and child can flourish”.

The learner adjusts actively in the school or college environment. When a learner enters in a class, he does something to that group just as the
group does something to him. This concept of dynamic interaction between the individual and the group has roots both in learning process and the psychology of group living. In the present research adjustment of the learner means healthy, energetic participation in group activities, grasping of responsibility, sometimes to the point of leadership and above all avoidance of any self-deception in the adjusting.

The well adjusted learner meets his school environment with the initiative appropriate to a full sharing with others and the optimum development of himself. The personality of an individual is a product of learning and adjustment is essentially a process of re-learning. Although a variety of factors influence adjustment many maladjustments are the results of unfortunate learning experiences and teaching methods (Shaffer, 1956). Adjustment gives the teacher confidence in the effectiveness of changes made in any school learner’s pattern of life. A well adjusted teacher begins by accepting each individual learner as he is. This is the basis for helping the learner towards what he may become.

Researches on cooperative learning show various positive outcomes in personal, educational and social aspects of an individual. In cooperative learning a group of students work and cooperate with each other to complete the task effectively. While completing the task students interact, discuss, debate, elaborate, conflict, etc. These interactions cause feeling of security, made student’s healthy relationships with each others. This in turn increases psychological health of an individual. Hence the researcher studied the effect of cooperative learning on adjustment of B.Ed. trainees in the present research.
1.5 Need of the Research:

“Individual commitment to a group effort; this is what makes a team work, a company work, a society work and a civilization work”.

Vince Lombardi, Former Green Bay Packers Coach

James Watson, who won Nobel Prize as co-discoverer of the double helix DNA molecule, stated “Nothing new that is really interesting comes without collaboration”.

Creative genius is the product of, and best develops within, cooperative efforts”. Watson

The truth of these assertions can be seen in the rich theory, research and practice surrounding cooperative learning. Cooperative learning is based on the assumptions i.e. man is a social animal. Being social it is cooperation is the human instinct.

Classroom environments around the world generally fit into three social categories: competitive, individualistic or cooperative (Johnson and Johnson, and Holubec, 1994). Competitive classrooms are based on the concept of segregation or ranking. Students are segregated based upon their performance. One student is placed at the centre of the class. Students’ feels that my success depends on your failure. In competitive environment student become selfish and never thinks about his peers and always looks towards the peer as competitor. In individualistic classrooms the success or failure of that student depends on his/her individual efforts. Hence the learner thinks my success has no connection to your success or failure. I can succeed or fail and I have no connection with your failure or success. The student never thinks that how the peer works for achieving his learning goals. He thinks only about his success and benefits. Thus his/her attitude
becomes selfish. Due to this student never socialized. He/she did not know his/her responsibility towards others.

In cooperative classrooms success of one student depends on success of other students. There is connection between the groups. The most refreshing and affirming thing about the cooperative classroom is that when the focus shift from the individual to the team, individual learning is enhanced, not diminished (Marzano, 2003; Marzano, Pickering and Pollock, 2001; Slavin, 1995, 1996).

A majority of institutions neglect the process of learning and focus on the outcome only. Traditional instructional methods focus only on individual goals. Cooperative learning provides learning environment which is cooperative and maximizes the potential of all students. Researches on cooperative learning gave evidences of benefits of cooperative learning over individualistic and competitive environment. If competitiveness seems so unfavourable to success then why it is mostly used in classrooms? By knowing all above reasons the researcher decided to work on cooperative learning.

When the researcher read about the cooperative learning she became excited to know more about this method. In B.Ed. curriculum various methods are included but cooperative learning method was not included or it has negligible weightage. Hence to know the detailed information about this strategy the researcher selected cooperative learning as one of the variable. While reviewing the literature and researches the researcher found that there are very few researches on cooperative learning at B.Ed. level. Hence researcher selected B.Ed. level for the current study. B.Ed. college trainees are developing the future of the nation i.e. secondary school students. If the B.Ed. College trainees will trained with cooperative learning
at this stage they sensitize their commitment towards their peers, society and they can develop civilized persons of the nation. Hence researcher conducted the study at B.Ed. level.

Researcher was working in B.Ed. colleges since from last ten years. She taught various subjects of B.Ed. curriculum. She found that B.Ed. college trainee’s attitude towards the subject Instructional System (Instructional Designs revised syllabus of 2014 of Savitribai Phule Pune University) was unfavourable. Trainees feel fear for the subject and worry about their score. Hence the researcher sensitizes the problem whether proper teaching method or strategy or technique can make trainee’s attitude favourable? Therefore by knowing benefits of cooperative learning researcher decided to work on impact of cooperative learning on attitude towards the subject Instructional Designs.

The present education system separates teacher from learner and learner from learner by evaluating or rating the learner. This rating gives the learner feeling of superiority over his peers or feeling of inferiority and these are the roots of maladjustment in the school. The criticism of school score shows adverse emotional effects upon learner’s attitudes and adjustment. The teacher has the difficult task of promoting better human relationships (Bruce, 1939). The present methods of teaching, learning experiences cause negative effect on the learner’s adjustment. Researches on cooperative learning shows that the positive interpersonal relationships caused due to cooperative learning enhances the quality of social adjustment to college life, increases commitment towards college and curriculum and heighten social membership in college (Johnson & Johnson, 1998). In cooperative learning the group works together towards a common goal enhancing self esteem, social competence and general psychological health. The researcher
wants to study whether cooperative learning can affect adjustment of B.Ed. college trainees? Hence adjustment is selected as dependent variable for the present research.

1.6 Importance of the Research:

Education is a powerful tool for development of society and the nation. Education is a source to develop student’s innate powers from inside to outside. Globalisation of education has further raised importance of education as it created competition among unequals i.e. the developing countries and developed countries. We have to compete with those who have a sound and quality system of education. The case study conducted by Reddy (1995) suggests that teachers are responsible for the success of education system. The International Commission on Education for the 21st century laid emphasis on various improved strategies for desired progress in the educational field. The well known strategy cooperative learning was included in the report.

Classrooms in India are totally teacher dominated and content centred. Teachers are delivering lectures to their students and students are passive listeners only. Teachers do not trust on students that students would learn on their own. This environment encourages only individualistic and competitive learning. But the present research is helpful to change this environment for a little bit because the role of teacher in cooperative learning changes. He is the facilitator who helps the students to learn the content and students on their own construct their knowledge. In cooperative learning students in group share their knowledge and solve their problems effectively. This will be helpful for changing the competitive and individualistic environment.
The present research is helpful for learning the content in joyful and healthy environment instead of taking any type of burden. In cooperative learning the students learn the content by helping each other irrespective of any discrimination. The groups in cooperative learning are heterogeneous but the students help each other for achieving their group goals.

The present research is helpful for making students civilized persons of the nation. Individual accountability is one of the elements of cooperative learning. It means students in a cooperative group are responsible for their as well as group’s success. Each student in group gives his/her best efforts for success of group. They cooperate with each other and cooperation enhances productivity. If this cooperation and individual accountability is sensitized to these nation builders i.e. B.Ed. trainees they will make civilized personalities of nation because students are the imitators of teachers. These B.Ed. trainees inculcate the values of cooperation and responsibility into their students.

The present research is helpful to develop various social skills and adjustment of trainees with self, environment and with peers. The present study is helpful for changing the attitudes of B.Ed. trainees towards various subjects especially Instructional Designs. Further the present research is helpful to change the attitudes of trainees towards their peers from unfavourable to favourable or from competitor to a facilitator/encourager. The present research is helpful in making a strong bonding and involvement of students into each other.

The present study is helpful to make students more confident and will enhance self-esteem of students. The present research minimizes student’s fear about using new techniques/strategies in classroom teaching. The
The present study makes students aware of benefits of using cooperative learning in classrooms.

In this competitive age jealousy, competition, etc. are found in each person. Each person has to adjust with self, colleague, society, etc. We can prove ourselves with the help of our peers. The roots of adjustment are embedded in cooperative learning. The person who helps others will definitely successful in his life and became socialized. Researches proved that positive attitudes, adjustment, self-esteem, leadership, retention of knowledge, etc. can be developed through cooperative learning. Learning to know, learning to do, learning to live together these pillars of education can be nourished by cooperative learning.

The B.Ed. college trainees have very high burden of curriculum. They are trained within the period of 9-10 months. The new curriculum (Revised 2014) of B.Ed. of Savitribai Phule Pune University is very vast. Various new subjects, lesson types, skills are added in the new curriculum. The time limit given to them is very short. But if the trainees learn the curriculum through cooperation they can achieve their personal as well as group goals. Hence to inculcate cooperative skills and to release the burden of the curriculum the present research is helpful.

The present research is helpful for using STAD cooperative learning strategy. The research tools i.e. Attitude Scale and Adjustment Inventory prepared by the researcher is helpful for giving guidelines for other researchers. Hence the present study will be helpful to change the view of present education system from inactive to active learners.
1.7 Statement of the problem:

_A study of effect of cooperative learning strategy on adjustment and attitudes of B.Ed. college trainees of Pune University (Savitribai Phule Pune University)._ 

1.8 Operational Definitions of Title:

1. **Cooperative learning strategy:**

   Cooperative learning strategy is considered as an instructional strategy in which small groups (4-5) of B.Ed. college trainees differ in various level (gender, geographical region and faculty) working together for success of groups and increase self as well as groups knowledge and skills in cooperative environment. In the present research STAD is used as cooperative learning strategy. In STAD students are assigned in 4-5 member learning teams with a variety of performance level, gender and ethnicity. Class presentations, team study, quizzes, individual improving scores and team recognition have made the five major components of STAD.

2. **Adjustment:**

   It is the process in which B.Ed. college trainees satisfy their personal (stress and conflict management), educational (participation in activities, thinking towards curriculum) and social (behaviour with peers and others) needs by acquiring some skills for satisfaction of these needs.

3. **Attitude:**

   It is the disposition of B.Ed. college trainees to respond to a set of statements related to cognitive (thinking/beliefs about the subject), affective (sentiments/feelings or emotions towards the subject) and
behavioural (actions towards the subject) the subject Instructional Designs in favourable or unfavourable way.

4. B.Ed. College:

Colleges giving training to the degree students who desire to work at secondary and higher secondary level as teachers.

5. Effect:

It is the behavioural change in the B.Ed. college trainees regarding attitude and adjustment due to cooperative learning strategy.

6. Trainees:

The students of B.Ed. colleges of Pune University (Savitribai Phule Pune University).

1.9 Objectives of the Research:

Following are the objectives of the present research:

1. To prepare a cooperative learning strategy.
2. To study the effects of cooperative learning strategy on attitudes of B.Ed. college trainees.
3. To study the effects of cooperative learning on adjustment of B.Ed. college trainees.
4. To compare the attitude scores of boys and girls B.Ed. college trainees obtained by using cooperative learning strategy.
5. To compare the attitude scores of rural and urban B.Ed. college trainees obtained by using cooperative learning strategy.
6. To compare the attitude scores of Arts, Commerce and Science B.Ed. college trainees obtained by using cooperative learning strategy.
7. To compare the adjustment scores of boys and girls B.Ed. college trainees obtained by using cooperative learning strategy.
8. To compare the adjustment scores of rural and urban B.Ed. college trainees obtained by using cooperative learning strategy.
9. To compare the adjustment scores of Arts, Commerce and Science B.Ed. college trainees obtained by using cooperative learning strategy.
10. To compare the post test attitude scores of boys B.Ed. college trainees of control and experimental group.
11. To compare the post test attitude scores of girls B.Ed. college trainees of control and experimental group.
12. To compare the post test attitude scores of rural B.Ed. college trainees of control and experimental group.
13. To compare the post test attitude scores of urban B.Ed. college trainees of control and experimental group.
14. To compare the post test attitude scores of Arts B.Ed. college trainees of control and experimental group.
15. To compare the post test attitude scores of Commerce B.Ed. college trainees of control and experimental group.
16. To compare the post test attitude scores of Science B.Ed. college trainees of control and experimental group.
17. To compare the post test adjustment scores of boys B.Ed. college trainees of control and experimental group.
18. To compare the post test adjustment scores of girls B.Ed. college trainees of control and experimental group.
19. To compare the post test adjustment scores of rural B.Ed. college trainees of control and experimental group.
20. To compare the post test adjustment scores of urban B.Ed. college trainees of control and experimental group.
21. To compare the post test adjustment scores of Arts B.Ed. college trainees of control and experimental group.
22. To compare the post test adjustment scores of Commerce B.Ed. college trainees of control and experimental group.
23. To compare the post test adjustment scores of Science B.Ed. college trainees of control and experimental group.

1.10 Assumptions of the Research:

Following are the assumptions of the present research:

1. Man is a social animal.
2. The groups regularly interact with each others.
3. Each individual tries to maintain balance between its needs and the circumstances for his satisfaction.
4. Attitudes are not permanent. They are static and can be changed by any external factor.

1.11 Hypotheses of the Research:

Following are the hypotheses of the present research

Research hypotheses:

1. There will be significant difference between the mean scores of attitudes of B.Ed. college trainees obtained through traditional and cooperative learning strategy.
2. There will be significant difference between the mean scores of adjustments of B.Ed. college trainees obtained through traditional and cooperative learning strategy.

**Null hypotheses:**

1. There will be no genderwise significant difference between the mean scores of attitudes of B.Ed. college trainees formed by cooperative learning strategy.

2. There will be no geographical or regionwise (rural and urban) significant difference between the mean scores of attitudes of B.Ed. college trainees formed by cooperative learning strategy.

3. There will be no facultywise (Arts, Commerce and Science) significant difference between the mean scores of attitudes of B.Ed. college trainees formed by cooperative learning strategy.

4. There will be no genderwise significant difference between the mean scores of adjustment of B.Ed. college trainees caused by cooperative learning strategy.

5. There will be no geographical or regionwise (rural and urban) significant difference between the mean scores of adjustment of B.Ed. college trainees caused by cooperative learning strategy.

6. There will be no facultywise (Arts, Commerce and Science) significant difference between the mean scores of adjustment of B.Ed. college trainees caused by cooperative learning strategy.

7. There will be no significant difference between the post test mean scores of attitudes of boys B.Ed. college trainees of control and experimental group.
8. There will be no significant difference between the post test mean scores of attitudes of girls B.Ed. college trainees of control and experimental group.

9. There will be no significant difference between the post test mean scores of attitudes of rural B.Ed. college trainees of control and experimental group.

10. There will be no significant difference between the post test mean scores of attitudes of urban B.Ed. college trainees of control and experimental group.

11. There will be no significant difference between the post test mean scores of attitudes of Arts B.Ed. college trainees of control and experimental group.

12. There will be no significant difference between the post test mean scores of attitudes of Commerce B.Ed. college trainees of control and experimental group.

13. There will be no significant difference between the post test mean scores of attitudes of Science B.Ed. college trainees of control and experimental group.

14. There will be no significant difference between the post test mean scores of adjustment of boys B.Ed. college trainees of control and experimental group.

15. There will be no significant difference between the post test mean scores of adjustment of girls B.Ed. college trainees of control and experimental group.

16. There will be no significant difference between the post test mean scores of adjustment of rural B.Ed. college trainees of control and experimental group.
17. There will be no significant difference between the post test mean scores of adjustment of urban B.Ed. college trainees of control and experimental group.

18. There will be no significant difference between the post test mean scores of adjustment of Arts B.Ed. college trainees of control and experimental group.

19. There will be no significant difference between the post test mean scores of adjustment of Commerce B.Ed. college trainees of control and experimental group.

20. There will be no significant difference between the post test mean scores of adjustment of Science B.Ed. college trainees of control and experimental group.

1.12 Scope, Limitations and Delimitations of the Research:

Scope of the research:

The present research was conducted on the B.Ed. trainees of Pune University. In present research the researcher implemented the STAD strategy on Marathi medium B.Ed. trainees. Hence the results of this study are applicable only to the trainees of B.Ed. colleges of Marathi medium studying in Pune University of Maharashtra state only.

Limitations of the research:

In the present research the researcher implemented STAD strategy on B.Ed. college trainees. As the trainees are human beings the researches had not control on their behaviour and responses. Hence the effectiveness of cooperative learning depends upon the responses given by the trainees.
Delimitations of the research:

1. The present research is limited to the trainees of B.Ed. colleges of Maharashtra state only.
2. The present research is limited to the STAD approach of cooperative learning strategy only.
3. The present research is limited to trainees of New College of Education and Samarth College of Education, Nashik only.
4. The present research is limited to two group pre test post test quasi experimental design only.
5. The present research is limited to the subject Instructional design of B.Ed. curriculum of Pune University only.

1.13 Chapterization of the Research:

The thesis of the present research ‘A study of effectiveness of cooperative learning strategy on adjustment and attitudes of B.Ed. college trainees of Pune University’ is divided into following five chapters.

Chapter I: Introduction of the research

Chapter I deal with the introduction, need of research, importance of research, statement of the problem, operational definitions of title, objectives, assumptions, hypotheses, scope, limitations and delimitations of the study.

Chapter II: Review of the related literature and researches

Chapter II deals with introduction, researches and articles related to attitudes and adjustment due to cooperative learning.
Chapter III: Research Methodology

Chapter III includes introduction, research method, population and sampling, tools of the study, description of the tools, statistical parameters and procedure of the study.

Chapter IV: Analysis, Interpretation and Discussion of the Results

Chapter IV deals with data analysis and interpretation of results. This chapter considers data collected through attitude and adjustment inventory, questionnaire and interview.

Chapter V: Findings, Conclusions, Recommendations and Suggestions for Further Research

Chapter V deals with findings, conclusions and recommendations for teachers, administrators and policy makers with new topics for research.