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Cooperative Learning: The Foundation for Interactive Classroom

Devendra Kumar[1], Dr. Hans Raj[2]
[1]Research Scholar, Faculty of Education, Siddharth University, Kapilvastu, Siddharth Nagar
[2]Assistant Professor, Department of Teacher Education, Ratan Sen Degree College, Siddharth Nagar
Affiliated to Siddharth University, Kapilvastu, Siddharth Nagar, Uttar Pradesh

Abstract

Cooperative learning is an innovative teaching strategy, in which the students collaborate in small groups to accomplish shared academic and social objectives. The paper specifically examines two prominent techniques: Jigsaw, a method that promotes expert knowledge and shared learning, and Student Teams Achievement Divisions (STAD), which focuses on individual improvement within heterogeneous groups. Cooperative learning methods like Jigsaw, Student Teams-Achievement Divisions (STAD), Think-Pair-Share (TPS), and Group Investigation (GI) shift classrooms from teacher-centered to student-centered environments. This paper also covers possible drawbacks, though, like uneven involvement and management difficulties. In conclusion, if possible, hazards are proactively controlled, the effective incorporation of cooperative learning, especially through structured models like Jigsaw and STAD presents a formidable tool for cultivating collaborative abilities and enhancing student outcomes.

Key Words: Cooperative Learning, Interactive Classroom, Jigsaw, STAD, TPS.

Introduction

Education is a person's life, beginning when they are born and ending when they pass away. Only the type of schooling is always evolving. In his family, education begins informally from birth, and after attending school, it takes on a formal shape. In the early days, education was teacher-centered. For example, during the Vedic era, the Guru-Shishya tradition held the Guru exclusive responsibility for instruction, and the Guru oversaw the whole educational process. The teacher had authority over everything, including the goal of education and the means of instruction and discipline. Instead of being teacher-centric, education is now student-centric. The start of this shift may be seen in Rousseau's naturalism in contemporary psychology. Only child-centered teaching strategies that encourage pupils to study at their own speed and in accordance with their interests would thus be successful in such a setting. Another related teaching-learning method is cooperative learning, which promotes mutual collaboration and allows students to study at their own speed, according to their interests and abilities. Brainstorming and cooperative learning are highly complementary and can be integrated to enhance problem-solving and creative thinking (Raj, 2014 & 2024).

Cooperative learning involves forming a group where each member learns while assisting the others. The foundation of cooperative learning is the idea of "self-learning from mutual learning." Cooperative learning is a type of group learning where everyone in the group works toward the same objective. The groupings in this case are tiny, with four to six people in each group. A teaching-learning technique called cooperative learning encourages a small group of

students to accomplish a shared objective and contributes to the development of a democratic atmosphere (Johnson & Johnson, 1984).

Meaning and Definitions of Cooperative Learning

The terms "cooperative" and "learning" combine to form the term "cooperative learning." Learning involves to learn, and cooperative means helping. Then, Cooperative learning, is "learning with assistance."

In the teaching-learning process known as cooperative learning, each group member is an Incharge of instructing and learning from the others. "Everyone learns and achieves" is the sole objective shared by the group's pupils. A small group of students helps one another study through a practice known as cooperative learning.

According to Johnson et al. (1998), “Cooperative learning is the instructional use of small groups so that students work together to maximize their own and each other's learning” (D. W. Johnson, R.T. Johnson & K.A. Smith, 1998).

Slavin (1996) defines Cooperative Learning as “instructional programs in which students work in small groups to help one another to master academic content” (Slavin, 1996).

According to Kagan (1994), “Cooperative Learning is a teaching arrangement that refers to a small heterogeneous group of students working together to achieve a common goal” (S. Kagan, & S. Kagan, 1994).

Artz and Newman (1990) defines Cooperative Learning as “small groups of learners working together as a team to solve a problem, complete a task, or accomplish a common goal” (Artz and Newman,1990).

Basic Elements of Cooperative Learning

Cooperative learning groups must adhere to specific guidelines; it is not just about putting students in groups to work together. The Cooperative Learning Center at the University of Minnesota states that cooperative learning groups require five components. There are as follows:

1. Positive Interdependence
2. Individual and Group Accountability
3. Small Group and Interpersonal Skills
4. Promotive face-to-face Interaction
5. Group Processing

(Johnson and Johnson 2009)

These five elements form the “Five Pillars” of cooperative learning.

1. **Positive Interdependence -** Pupils think that success is only achievable if everyone else succeeds and that everyone is related to them. Instead of encouraging rivalry, this fosters cooperation and solidarity amongst team members.
2. **Individual and Group Accountability -** Every student is incharge of their own education and group contributions. This guarantees that every member is motivated to engage and actively involved.

Fig.1: Five Pillars of Cooperative Learning

3. **Small Group and Interpersonal Skills -** Students learn to work with others effectively, practicing skills such as active listening, constructive feedback, and conflict resolution.
4. **Promotive face-to-face Interaction -** Direct interaction between students is a common component of cooperative learning, which fosters cooperation, communication, and idea exchange. Students assist and encourage one another, to put it briefly.
5. **Group Processing -** Groups occasionally assess their level of collaboration and discuss opportunities for development. Students' cooperative experience can help them develop metacognitive awareness.

Some Techniques of Cooperative Learning

Cooperative learning in practice is found in many forms such as STAD, Jigsaw, Think-Pair-Share, TGT, Learning Together, Group Investigation.

STAD (Student Teams Achievement Divisions):

Robert Slavin and his colleagues created STAD, the most basic cooperative learning strategy, at John Hopkins University in Baltimore in 1980. Several small groups of students with varying abilities collaborate to accomplish a shared learning objective using the STAD cooperative learning approach (Slavin, 1980).

In STAD, firstly the teacher teaches the class as a whole and then all students are separated into groups of four to five members heterogeneously. These groups then work together to make sure that every participant fully understands the lesson. The teacher then assigns individual quizzes, during this time students are not allowed to help one another. Students are driven to pursue greatness to improve the group's total performance, even though the assessment is individual in nature.

STAD is often used in primary through higher education level and in many subjects from Mathes to Social Science. According to Slavin (1991), STAD contains a regular cycle of instructional activities, these are as follows:

a. **Teach -** The teacher presents the lesson.

b. **Team Study -** Students work in their teams on worksheets given by the teacher to command the lesson.

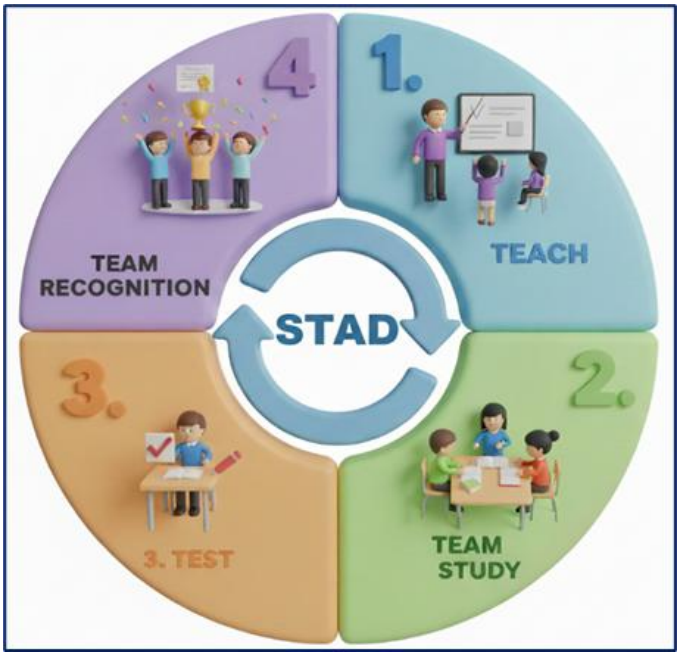

Fig. 2: Procedure of STAD ((Student Teams Achievement Divisions)

c. **Test -** Students take individual quizzes or other assessments like essays or performances.

d. **Team Recognitions -** Team scores are calculated based on individual scores and high-scoring teams are recognized through certificates, class newsletters, or bulletin boards.

Jigsaw:

Jigsaw is a successful and popular cooperative learning approach and was developed by Elliot Aronson and his colleagues in 1971 at the University of Texas. In Jigsaw, the group is well structured and interdependence is required among students which make it a unique teaching learning method and encourage the students to take an active part in their learning.

Home Group A	Home Group B	Home Group C	Home Group D	Home Group E
Subtopic 1	Subtopic 1	Subtopic 1	Subtopic 1	Subtopic 1
Subtopic 2	Subtopic 2	Subtopic 2	Subtopic 2	Subtopic 2
Subtopic 3	Subtopic 3	Subtopic 3	Subtopic 3	Subtopic 3
Subtopic 4	Subtopic 4	Subtopic 4	Subtopic 4	Subtopic 4
Subtopic 5	Subtopic 5	Subtopic 5	Subtopic 5	Subtopic 5

Fig. 3: Home Group Structure for Jigsaw with five team members

In this method of cooperative learning, the students are divided into small groups of five or six students each. The lesson is divided into five or six parts and these parts of the lesson are given to each student. Students with similar topics meet and gather information, this group is known as the "expert group." Then the students return to their original group, known as the "home group." Every student will teach their group about the assigned topic. Students are tested on what they have learned from their fellow members.

(All Subtopic 1 Experts from Groups A-E)
(All Subtopic 2 Experts from Groups A-E)
(All Subtopic 3 Experts from Groups A-E)
(All Subtopic 4 Experts from Groups A-E)
(All Subtopic 5 Experts from Groups A-E)

Fig. 4: Formation of Expert Groups (Members of the same colour/subtopic)

Each student, having become an 'Expert' on one subtopic of the material or topic; is now responsible for teaching their portion to the rest of their original group.

Home Group A	Home Group B	Home Group C	Home Group D	Home Group E
Expert	Expert	Expert	Expert	Expert
Expert	Expert	Expert	Expert	Expert
Expert	Expert	Expert	Expert	Expert
Expert	Expert	Expert	Expert	Expert
Expert	Expert	Expert	Expert	Expert

Fig. 5: Jigsaw (Return to Home Groups)

This method enhances communication and problem-solving abilities, increases understanding, and lessens prejudice by encouraging empathy and interaction among diverse kids.

Think-Pair-Share (TPS):

At the University of Maryland, Frank Lyman created the straightforward cooperative learning strategy known as Think Pair Share. Students may collaborate with others and work independently with the Think Pair Share cooperative learning method.

"Thinking" in this context refers to the teacher posing lecture-related questions to get pupils to reflect on them. The teacher also invites pupils to "Pair" at this point so they may have a discussion. "Sharing" is the process of discussing the intersubjective conversation outcomes in each pair of results with the whole class of pairings.

In this method, students are asked to sit in pairs, then the teacher asks one question. Each student is asked to think individually about the answer to the question, then discuss the results of his thought with the pair. After that, the teacher asks each pair to share and explain the results.

Teams-Games-Tournament (TGT):

TGT is a cooperative learning strategy that was created at Johns Hopkins University in 1973 by Keith Edwards and David DeVries. TGT uses competition, cooperation, and interactive games to get pupils interested in academic. The TGT process completes in five steps, as follows:

1. **Class Presentation -** The teacher introduces the material.
2. **Team Study -** Students collaborate to learn and review.
3. **Games -** Academic content is reinforced through quizzes or activities.
4. **Tournaments -** Students compete individually against members of other teams with similar skill levels.
5. **Team Recognition -** Groups are rewarded based on collective performance.

Implementation of Cooperative Learning in the Classroom Situation:

1. **Group Formation -** Teachers should carefully consider group composition, ensuring diversity in terms of abilities, backgrounds and learning styles. Balance groups facilitate peer learning and maximize individual contributions.
2. **Establishing Clear Goal -** Clearly defined learning objectives and group tasks help students understand expectations and stay focused on the assigned tasks.
3. **Providing Structure Activities -** Activities should be designed to promote interaction and cooperation among group members. Tasks can range from problem-solving exercises to project-based learning activities.

4. **Monitoring and Facilitation -** Teachers play a crucial role in monitoring group dynamics and providing guidance as needed. They should facilitate discussions, clarify concepts and encourage equitable participation.
5. **Assessment and Feedback -** Assessments should include both individual and group components to evaluate students' understanding and cooperation skills. Constructive feedback helps students reflect on their learning process and improve their performance.

Merits of Cooperative Learning:

Cooperative learning encourages active participation from all group members.

1. Students engage in discussions, problem-solving and decision-making which enhances their understanding of subject matter.
2. It Gives openings for intercultural understanding.
3. Cooperation within groups nurtures social skills such as communication, empathy and conflict resolution**.**
4. CL promotes critical thinking and deeper understanding of concepts.
5. Cooperative learning positively impacts academic achievements across various subjects and grade levels.
6. It creates the capacity to clarifying concepts, protecting their thought, and challenging each other's presumptions (Raj, 2024).

Demerits of Cooperative Learning

1. **Dominance by Some Group members:** Some students may dominate the group, leading to others feeling marginalized or excluded.
2. **Assessment Challenges:** It can be difficult to access individual student learning and understanding in a group setting.
3. **Time Consuming:** Cooperative learning activities can be time-consuming to plan and implement.
4. **Classroom Management:** Managing groups and ensuring everyone is on task can be challenging etc.

Conclusion:

Cooperative learning is an active learning process because students learn more by creating and sharing knowledge in groups. Cooperative learning can provide students with the opportunity of discussion and help students develop essential social skills (Khan & Inamullah, 2011). Through collaboration and social contact, cooperative learning provides a dynamic educational approach that fosters life skills, scientific creativity, and a scientific attitude in addition to improving academic performance. Students who participate in cooperative learning are better prepared for success in school and beyond.

There are several advantages to cooperative learning, including higher academic performance, stronger critical thinking, improved social and communication skills, and more engaged and motivated students. Students gain a sense of shared obligation and duty, form wholesome connections, and learn from a variety of viewpoints. However, there are drawbacks as well, such as the possibility of social loafing (unequal engagement), disputes over roles and responsibilities, classroom management, and difficulties with assessments where it may be unjust to grade the group. A noisy classroom might make it hard for certain pupils to focus, and some students may dominate while others stay inactive. Thus, it can be concluded that cooperative learning is a powerful tool for modern and future classrooms, but its effectiveness depends heavily on proper implementation.

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