

Conference Paper

Theoretical Perspectives on Cooperative Learning

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Abstract

Cooperative learning is a set of instructional learning method aimed to encourage students to work together on academic tasks. The purpose of this research is to provide high quality assistance for students to gain achievement in their study. In this study, the researcher concerns with the "Theoretical Perspectives on Cooperative Learning" focused on Cognitive developmental, behavioral and social interdependence based on Piagetian and Vygotskian's theories (2017). Cognitive interdependence is a mental state characterised by pluralism, and collective representations of the self-in-relationship. Behavioral interdependence refers to the mutual impact that people have on each other as their life and daily activities intertwine. Social interdependence relates to positive interdependence, individual accountability, promotive interaction, appropriate use of social skill, and group processing. The type of the research used in this study is library research with the research design descriptive qualitative research by Sugiyono (2013). The sources of the data are documents, script and other relevant sources relating to the topic. The finding of this research shows that cooperative learning creates students' social interaction and maximizes their academic skills.

Keywords: cognitive developmental, behavioral, social interdependence

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1. Introduction

Cooperative learning is a study approach aimed to manage classrooms activities into academic and social learning experiences. Cooperative learning is not merely arranging students into groups but it has been proved as structuring positive interdependence. Basically, students have a lot of differences, whether in genders, races or learning styles. Cooperative learning dissolves all these diversities into cognitive, behavioral and social interdependence. Cognitive interdependence is a mental state characterized by pluralistic, and collective representations of the self in relationship. Behavioral interdependence refers to the mutual impact that people have on each other as their life and daily activities intertwine. What one person does influences what the other person

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wants to do and can do. Behavioral interdependence strengthens the relationship among people in one group. It is like the bond or unity of them. Social interdependence in cooperative learning produces positive interdependence, individual accountability, promotive interaction, appropriate use of social skill and group processing. Cooperative learning is an alternative learning method besides teacher-oriented method because in this present time students rarely construct face to face interaction among others due to their addiction to gadget. Thus this condition causes neglectedness. To create a more friendly atmosphere in learning, there must be a teaching method that can improve social interaction. Cooperative learning is the way it is.

2. Literature Review

There have been many scholars developing theories of cooperative learning. In this study, the researcher focuses on Piaget's and Vygotsky's theories. Jean Piaget's work (1959) stressed on the benefits of cognitive conflicts among students that expose students' misconceptions and lead to higher quality understandings. Vygotsky's work (1978, p.90) stressed benefits of collaborating with a more expert peer because what a student carries out jointly with another could be incorporated into his or her individual performance.

Research on cooperative learning strategies has been done from 2 major theoretical perspectives, developmental and motivational. The developmental perspective, based on Piagetian and Vygotskian theories, holds that task-focused interaction among students enhances learning by creating cognitive conflicts and by exposing students to higher-quality thinking. In contrast, motivational theories of cooperative learning emphasize that rewarding groups on the basis of the individual learning of all group members creates peer norms and sanctions favoring achievement-related efforts and active helping of peers. In the developmental view, incentives for group learning efforts are unnecessary, while in the motivationalist view they are crucial to enhance learning outcomes. From the developmental perspective, the effects of cooperative learning on student achievement would be largely due to the use of cooperative tasks. In this view, the opportunity for students to discuss, argue, and present their own and listen to one another's viewpoints is the critical element of cooperative learning with respect to student achievement.

The main theory that underpins cooperative learning refers to social constructivism advanced by Vygotsky who considered that the roles of culture and society, language, and interaction are important in understanding how humans learn. Vygotsky assumed

that knowledge is cultural; he took a socio-cultural approach in his study with children. This approach can be briefly described as “cooperative” and “cultural.” Vygotsky asserted that the development of individuals, including their thoughts, languages, and reasoning processes, is a result of culture. These abilities are developed through social interactions with others therefore, they represent the shared knowledge of a given culture. Vygotsky studied the growth of children from their environment and through their interaction with others, he found that what are given and what happens in the social environment (e.g., dialogues, actions, and activities), help children learn, develop, and grow.

In Vygotsky’s social constructivism, social interaction is an important way in which children learn knowledge available in their culture without needing to reinvent it by them. Parents, adults, caregivers, teachers, and peers play important roles in the process of appropriation in children’s learning. Teachers and adults give direction and instructions, comments, and feedback to students. These are not passively received by students because they also communicate with teachers, conveying them their problems or their answers in an interactive manner. Children also use conversations in working with their peers in handling exercises, projects, and problems. In this way, they exchange ideas and receive information, thereby they generate understanding and develop knowledge.

This process of learning is regarded as important because knowledge itself is developed through history, and it should go through appropriation in a social environment. Learning is achieved through the process of development; hence, learners should be active participants in the process of learning. Activity is important in learning; it is also a key concept in socio-cultural theories that explain the importance of doing. By engaging in meaningful activities, learners interact with peers and more knowledgeable people. Through interaction, children develop dialogues within the structure of activities; as a result, learning and development occurs. To Vygotsky, language plays an important role in learning.

3. Research Method

Research design is a procedural plan adopted by the researcher to conduct the research. One of the research designs based on its purpose, approach, process, assumption, role of researcher and methods is qualitative descriptive research. According to Sugiyono (2013) the processes of qualitative research are designed of three stages: descriptive stage (including social context; place, actor and activity), reductive

stage (deciding focus, selecting the ones described), selection stage (elaborating focus to be more detailed components).

The type of the research used in this study is library research. The sources of the data are documents, script and other relevant sources that relate to the topic.

4. Discussion

4.1. Cooperative learning practice

In order to construct a lesson in cooperative learning model, the following 5 principles and elements should be included:

- Each member in a group has a unique contribution for group success.
- All members in a group must be accountable for mastering the concept.
- Some group work may be done individually but some must be done interactively among group members and provide feedback and challenge to one another to reach the mutual goal.
- Group members are guided to develop.
- Team members decide the group goals, describe what actions benefit the group, periodically assess what they have done and identify changes to be made to get better result. Systematically good structured collaboration ensures long term success.

4.2. Cooperative learning methods and models

Various cooperative learning methods and models have been developed over the years by different scholars and put into actual practice in the classroom. In general, cooperative learning methods are classified into 2 parts:

- **Structured Team Learning**
It involves rewards to teams based on the learning progress of their members, and they are also characterized by individual accountability, which means that team success depends on individual learning, not group products.
- **Informal Group Learning Methods**
It covers methods more focused on social dynamics, projects, and discussion than on mastery of well-specified content.

The followings are different models of cooperative learning:

Categories	Models
Structured Team Learning	<ul style="list-style-type: none"> - Student Teams-Achievement Division (STAD) - TEAMS-Games-Tournament (TGT) - Cooperative Integrated Reading and Composition (CIRC)
Informal Group Learning Methods	<ul style="list-style-type: none"> Jigsaw II - Learning Together - Think-Pair-Share - Group Investigation

4.3. Structured team learning

4.3.1. Student teams-achievement division (STAD)

STAD is appropriate to use in a wide variety of subjects including mathematics, language, arts and social studies.

According to Slavin (1995), STAD consists of four steps:

- Whole-class presentation
- Group discussion

Heterogeneous teams of four are formed, based on students' performance level, ability, sex, ethnicity and social economic status, to study the materials and do the worksheets.

- Test

After the group discussion, all students take individual test on the material, at which time they cannot help one another. Usually, the quizzes are in the form of multiple-choice questions. Students test scores are compared to their own past averages, and points are awarded based on the degree to which students can meet or exceed their own earlier performances.

- Group recognition

These points are then summed to form team scores; the group with the highest average group improvement score receives a group reward.

4.3.2. Teams-games-tournament (TGT)

TGT uses the same teacher presentations and teamwork as in STAD, but replaces the test with weekly tournament game which does not use the system of improvement score.

Team-Games-Tournament has 4 steps:

- Whole-class presentation
- Group discussion
- Tournament
- Group recognition

4.3.3. Cooperative integrated reading and composition (CIRC)

Developed by Slavin, CIRC is designed for use with specific materials for teaching reading and writing in the upper elementary grades. CIRC comprises three major language activities:

- Basal-related activities
- Direct instruction in reading comprehension, and
- Integrated language arts/writing

All students are assigned to teams composed of two pairs from two different groups. Each heterogeneous group is made up of a high ability pair and a low ability pair. In other words, while the pair is homogeneous in ability, the group is heterogeneous in ability. Different reading materials are assigned to the pairs according to their ability so that all members have an equal opportunity to succeed.

Research on CIRC has found positive effects in upper-elementary and middle school reading.

4.4. Informal group learning methods

4.4.1. Jigsaw II

Jigsaw was originally designed by Elliot Aronson and his colleagues in 1978. Slavin (1994) developed a modification of Jigsaw by adapting Elliot Aronson's technique. It is appropriate to use in subjects like language, literature and social studies in which the learning materials are in the written narrative mode.

Jigsaw II has 5 steps:

- Reading
- Expert group discussion
- Home group reporting
- Testing, and
- Group recognition

4.4.2. Learning together

David Johnson and Roger Johnson developed the Learning Together models of cooperative learning [2]. The model is characterized by the 5 elements of cooperative learning:

- Positive Interdependence
- Individual and group accountability
- Face-to-face promotive interaction
- Interpersonal and small group skills
- Group processing

4.4.3. Think-pair-share

Kagan (1989) developed the Structural Approach based on using 'structure' which is defined as content-free ways of organizing social interaction in the classroom.

One of easy-to-use cooperative learning structures is Think-Pair-Share which consists of 3 steps:

- For example, in a reading comprehension lesson, each student is asked to do silent reading on the comprehension material or passage and to try to answer the questions provided by teachers.
- After working individually for an answer, students pair up and share their views on the questions until they have consensus on an answer. During the sharing, half of the class is practicing the skill of speaking; while the other half is practicing the listening skill. Kagan and Kagan (1994) call this simultaneous interaction because 'it increases the number of students actively involved at any one moment and thus the amount of active participation time per student'.
- The students share their answers with the whole class.

4.4.4. Group investigation

Group investigation, developed by Shlomo Sharan and Yael Sharan in 1992, is a general classroom organization plan in which students work in small groups using cooperative inquiry, group discussion and cooperative planning and projects.

According to Sharan and Sharan (1994), the implementation of group investigation has 6 stages:

- Determining subtopics and organizing into groups
- Planning investigation
- Carrying out investigation
- Planning a presentation
- Giving a presentation
- Evaluating achievement

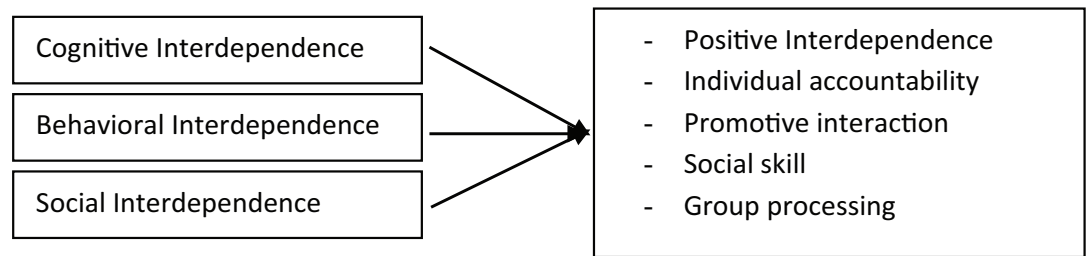
Below is the Syntax model of overall cooperative learning.

Phases	Activity
Decide the topic	Elaborate the topic into proportional details
Present goals and set	Explain the target of learning
Organize students into groups	Divide the students into effective groups
Assist team work and study	Give assistance to group members while doing the task
Test on materials	Evaluate the group members on the presenting topic or give chance to the group to give presentation related to the topic
Provide recognition	Prepare the way to give the judgement or reward for the group members.

The table below shows the differences between cooperative learning and traditional learning.

Cooperative Learning	Traditional Learning
Student – oriented	Teacher- Oriented
There is positive interdependence among the group members as they help and motivate one another to gain promotive interaction.	The teacher tends to let students dominate more as they work independently.
There is individual accountability which measures the concept mastery of each individual, in this case the group is given feedback about its individuals’ result so they can find out who needs assistance and who should assist.	The students work individually so they need to be responsible for themselves
The group is heterogeneous whether in academic ability, genders, races, ethnics, etc.	The group is homogeneous.
Develop leadership skill as the group leader is chosen democratically or in turns to give chance to all group members to lead the group.	No leadership skill is required.
Social skill is needed. It includes leadership skill, communication skill, people trust and conflict management skill.	Social skill has no impact.
When the process of cooperative learning is on, the teacher keeps on observing the students and interfere in case any problems occur.	Students work independently without any interference.
The emphasis of the learning goal is interpersonal relationship for group success.	The emphasis of the goal is task settlement.

Finally Cooperative learning outcome can be drawn as figure below



5. Conclusion

Student-centered teaching approach is recommended to stimulate active learners develop social interaction among students in order to get high quality learning outcome in education reform. Cooperative learning is one of the alternative methods that can be implemented in order to build face to face communication that can create positive interaction among learners.

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