

Implementation of cooperative learning in physical education learning in elementary

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Abstract

The purpose of this study was to explore teachers' perspectives on the implementation of cooperative learning in physical education programs, and students' responses to its implementation in their own physical education classes. Data collection included interviews with physical education teachers and students in two mixed third- and fourth-grade classrooms and two fourth-grade classrooms, nonparticipant observation, field notes, teacher journals, and documents. Inductive analysis and the constant comparative method were used to analyze and organize the data throughout the research process. The findings revealed that teachers and students shared similar perceptions of cooperative learning. This was evident in the categories that emerged from the data: lesson objectives, student roles, accountability, communication skills, and collaborating. This study suggests that the cooperative learning instructional model has many benefits for physical education, but its implementation is likely not smooth or problem-free. Teachers must make substantial adaptations in the way they organize and manage their classrooms. Implementing cooperative learning is complex and may take time for teachers to become comfortable with it.

Keywords: Innovation; Instructional Model; Constructivism; Cooperative Learning

1. Introduction

Cooperative learning is a dynamic instructional model that can teach diverse content to students at different grade levels. Students work together in small, structured, heterogeneous groups to master the content. They are responsible not only for learning the material but also for helping their peers learn (Yang, 2023). In general education, researchers have found that cooperative learning can have a positive impact on academic achievement, self-esteem, active learning, social skill development, and the achievement of equity (Tarani and Amin, 2023). While potentially beneficial, implementing cooperative learning does require substantial modifications and adaptations in how teachers organize and manage classrooms (Tran, 2019).

Cooperative learning advocates five essential elements: positive interdependence, individual accountability, proactive face-to-face interaction, interpersonal and small-group skills, and group processing (Silva et al., 2022). One of the most appealing attributes of cooperative learning is its dual focus on social and academic outcomes (Mendo-Lázaro et al., 2022). (Bećirović et al., 2022) argue that social skills need to be taught explicitly. Teachers should plan specific social skills, such as listening, collaborating, and providing appropriate feedback to each other, to improve students' interpersonal skills. Students gain the greatest learning gains when teachers delegate responsibilities so that more students can talk and work together in various learning centers (Erbil, 2020).

Some physical education researchers have advocated the use of cooperative learning as a source of change in physical education classes (Casey and Quennerstedt, 2020). Cooperative learning in physical education has shown promising results (Zach et al., 2023). Iglesias et al. (2023) suggested that cooperative learning can improve physical fitness and

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social interaction for elementary, kindergarten, and preschool students. Rivera-Pérez et al., (2021) explored the use of cooperative learning and its effect on social improvement and participation of third-grade students in physical education classes. They reported that sociometric ratings improved for target students who had low scores prior to the 6-week cooperative learning unit. In addition, social diagnostic assessment scores showed improvements in students' social reasoning skills, interaction, and social participation.

In physical education lessons using cooperative learning, Schulze and Huth, (2023) found that teachers and students emphasized improving motor skills, developing social skills, working together in teams to help others improve their skills, and taking responsibility for their own learning. Schulze and Huth, (2023) reported that a physical education teacher believed that cooperative learning helped him achieve the following goals: developing motor skills, developing game strategies, actively participating, respecting peers, accepting responsibility, and improving communication skills. Cooperative learning encourages participation, is fun, and allows them to develop motor skills and interpersonal skills.

Several applications of cooperative learning, including those in this study, are closely related to cognitive constructivism theory. Bores-García et al. (2021) emphasize three principles of constructivism evident in the application of cooperative learning in this study: active learners, social learners, and creative learners. As active learners, Sánchez et al. (2023) argue that students are not passive recipients of knowledge but are engaged in tasks that stimulate decision-making, critical thinking, and problem-solving. As social learners, students construct knowledge through social interactions with their peers facilitated by their teachers. As creative learners, students are guided to discover their own knowledge and create their own understanding of the subject matter. Individuals utilize prior knowledge and experiences to construct knowledge.

Based on the explanation above, the purpose of this paper is to explore (a) teachers' perspectives on the implementation of cooperative learning in elementary physical education programs, and (b) students' responses to the implementation of cooperative learning in their own physical education classes.

2. Method

This research was conducted at AK Elementary School, Surabaya, with third- and fourth-grade students and physical education teachers as participants. The identities of the school and participants were anonymized, and informed consent was obtained from all parties. Data were collected through interviews, non-participant observation, teacher journals, field notes, and learning documents.

PJOK teachers were interviewed informally before and after the lesson to clarify objectives and perceptions of the implementation. In-depth interviews were conducted at the beginning and end of the observation period, lasting 40–65 minutes. Student interviews were conducted in small groups (3–4 students) after the lesson, lasting approximately 10 minutes, to determine their perceptions of the learning process and the new program. Non-participant observations were conducted in four classes throughout the lesson, supplemented by structured field notes. Documents such as lesson plans, unit guides, and school policies were also analyzed to enrich the context.

Data were analyzed using inductive analysis and constant comparison techniques. The process included organizing the data, inductively developing categories, and grouping themes. Triangulation was conducted by combining teacher and student interviews with observational and documentary data to increase the validity of the findings.

3. Result

3.1. Learning Objectives

The PE (Physical Education) teacher aimed to foster students' psychomotor, cognitive, and affective development. Each lesson was designed to ensure all students experienced success, appreciated individual differences, and learned according to their own abilities. These objectives motor, cognitive, and social were clearly integrated into lesson plans (field notes). In a final interview, the teacher stated: "I want them to be active, to work as a team, to respect one another, to give and receive feedback, and to improve both their own and their peers' movement skills." Students echoed these goals, highlighting teamwork and motor skill development. They understood the importance of collaboration while learning new strategies and physical skills such as dribbling or obstacle navigation. Motor skill improvement was reinforced through learning cues three to four-word phrases emphasizing key skill elements (e.g., "bend your knees," "square to the target") helping students both understand and assess partner performance.

3.2. Student Roles

Cooperative learning required students to take specific roles to build positive interdependence. Groups were divided into coach-performer pairs, where the coach ensured correct form, giving performers more practice opportunities. When role conflicts arose, students developed strategies such as rotating or sharing roles. Many enjoyed being the coach, as it deepened their own learning: "When you teach a skill, you internalize it," noted the PE teacher. This highlights a key distinction of cooperative learning it promotes responsibility not only for oneself but also for peers.

3.3. Role Clarity and Conflict

Early in the study, disagreements emerged over the role of the "encourager." While the teacher wanted all students to be encouragers, field observations revealed this did not happen naturally. Researchers suggested assigning the role specifically to teach students how to offer verbal support and relevant feedback. Eventually, this role proved valuable in enhancing teamwork.

3.4. Accountability

Accountability was built through task sheets that outlined responsibilities and included identical learning cues found in assessment rubrics. Initially, students found the sheets overwhelming, but revisions made them more concise and effective. Peer feedback, both skill-specific and general, was consistently encouraged. The teacher often spotlighted model group behavior to reinforce expectations and strengthen student ownership of the learning process.

3.5. Communication Skills

Cooperative learning created opportunities for students to develop interpersonal and communication skills, especially listening. Students reported they learned best by interacting with peers and emphasized listening as essential for task completion. When communication breakdowns occurred (e.g., role disagreements, equipment use), group processing sessions helped address problems and build collaborative solutions. Reflection questions such as "What went well?" and "What do we need to improve?" guided constructive dialogue and role accountability.

3.6. Working Together

Students were encouraged to collaborate in small or large groups, fostering interdependence as a core part of PE programming. Initially, some students disliked being grouped without close friends. To address this, the teacher allowed them to pair with one friend before combining into groups of four, helping them gradually rely on diverse peers. The teacher emphasized that true teamwork requires intentional planning and continuous facilitation, noting that simply placing students in groups doesn't ensure cooperation.

4. Discussion

This study describes a teacher and her students implementing a new teaching approach, namely cooperative learning. Therefore, it provides an overview of the process of change in teaching. Using cooperative learning or a constructivist approach (Sriyatin et al., 2018). Teaching often requires conceptual changes in the way a teacher works. For physical education teachers, this means different management, teaching, and planning—labor-intensive activities that force them out of their comfort zone. Sánchez et al., (2023) argue that change means facing uncharted territory. This creates anxiety for teachers who need support and guidance to accommodate feelings that they do not have full control over their teaching and learning environment. It is not surprising that Erbil, (2020) found many teachers are unable or unwilling to delegate responsibility to their students, namely letting go and letting children solve their own problems.

During the implementation of cooperative learning at SD AK, the Physical Education Teacher reported on students' psychomotor, cognitive, and affective goals in her program. The social and motor goals often articulated by students were enhanced by the use of roles. The use of different roles in group work was a significant change for the Physical Education Teacher and her students. In fact, at the beginning of the study, she was unsure of the need for roles. Students typically enjoyed using the roles and were enthusiastic about them, but often failed to perform them effectively, especially at first. It is clear from this study that teachers cannot simply place students in small groups and expect them to know how to perform their roles. The Physical Education Teacher learned that the skills necessary for each role must be taught explicitly. An example is brainstorming with students about positive words that could be used as an encourager and then incorporating these into student worksheets.

Some aspects of cooperative learning were initially problematic but improved. Physical education teachers initially felt frustrated by having to sacrifice practice time to implement cooperative learning, but this improved as students became

familiar with the learning model. Furthermore, despite an awareness of the importance of collaboration, students did not always cooperate well when completing group assignments. Conflicts often arose, but students became more adept at making decisions with others as they practiced their interpersonal skills.

Physical education teachers reflected on their practices and made changes to the program, typically simplifying the organization of cooperative learning, such as switching from four roles to two or modifying task sheets. Task sheets help students take responsibility for learning motor skills, a key element of cooperative learning that is often missing. Yang (2023) reported that procedures for ensuring individual accountability were often missing from teachers' interpretations of cooperative learning. Tabrani and Amin (2023) noted that educators are often unaware of the essential conditions for cooperative learning to produce positive outcomes. They added that simply placing students in groups and asking them to work together does not guarantee higher achievement or positive interpersonal outcomes.

Many researchers have made a connection between cooperative learning and constructivism (B et al., 2023). Despite challenges in implementing this innovation, cooperative learning at SD AK ultimately illustrates the three principles of constructivism described by Ulfadhilah (2021): active learning, social learning, and creative learning. Students learn more about motor skills by analyzing each other's skills and providing feedback on specific skills to their groupmates. Students are given tasks or problems to solve together in their groups. The teacher organizes the content and acts as an instructor and facilitator.

5. Conclusion

This research shows that cooperative learning holds much promise for physical education, but its implementation is not easy. Teachers must make substantial adaptations in the way they organize and manage their classes. Implementing cooperative learning is complex and may take time for teachers to become comfortable with it. More research on the implementation of cooperative learning is needed to ease the transition for other teachers who may want to embark on this journey of change.

Compliance with ethical standards

Disclosure of conflict of interest

No conflict of interest *to be disclosed*.

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