



## **The Effect of Peer Teaching on Elementary Students' Discipline in Physical Education**

**Veny Juniarni Hardi<sup>1\*</sup>, Deswita Supriyatni<sup>2</sup>, Sumbara Hambali<sup>3</sup>**

<sup>1,2</sup>Department of Physical Education, Health and Recreation, STKIP Pasundan, Indonesia

<sup>2</sup>Department of Physical Education, STKIP Pasundan, Indonesia

\*Corresponding Author: Veny Juniarni Hardi, e-mail: [venyjh@stkippasundan.ac.id](mailto:venyjh@stkippasundan.ac.id)

Received: 01 July 2023, Approved: 01 September 2026, Published: 30 September 2026

### **Abstract**

**Study purpose.** This study examined whether a peer teaching model produced higher discipline outcomes than non-peer teaching instruction among fifth-grade elementary students.

**Materials and methods.** A quantitative two-group experimental design with repeated observations was used. All 60 active fifth-grade students of SDN Tenjolaya 3 (24 boys and 36 girls; mean age approximately 11 years) were included through total sampling and subsequently allocated randomly to a peer teaching group ( $n = 30$ ) and a control group ( $n = 30$ ). The experimental group received structured peer teaching, whereas the control group received teacher-led non-peer teaching instruction. Student discipline was assessed using a structured behavioral observation sheet adapted from an existing student-discipline instrument and theoretically grounded in rule compliance, self-control, responsibility, and social interaction. The adapted instrument comprised seven observable discipline indicators rated using a three-level scale. However, separate independent observer ratings were not available in the archived dataset; therefore, inter-rater reliability could not be recalculated. Data were analyzed using descriptive statistics, a  $2 \times 3$  mixed analysis of variance, and an independent samples t-test on accumulated discipline scores.

**Results.** The peer teaching group obtained higher discipline scores than the control group across all observations. Mean total discipline scores were  $44.00 \pm 3.83$  in the peer teaching group and  $38.83 \pm 3.48$  in the control group. Mixed analysis of variance showed a significant group effect,  $F(1, 58) = 29.84, p < .001$ , partial  $\eta^2 = .340$ , and a significant meeting effect,  $F(2, 116) = 316.48, p < .001$ , partial  $\eta^2 = .845$ . The group  $\times$  meeting interaction was not significant,  $F(2, 116) = 1.31, p = .273$ . The independent samples t-test confirmed a significant between-group difference in total discipline scores,  $t(58) = 5.46, p < .001$ , mean difference = 5.17, 95% CI [3.27, 7.06], Cohen's  $d = 1.41$ .

**Conclusions.** Peer teaching was associated with higher discipline outcomes in elementary physical education. The findings support the pedagogical value of assigning students structured responsibility as peer tutors, although future studies should include baseline measurement, longer intervention periods, and inter-rater reliability evidence.

**Keywords:** Character Education, Discipline, Elementary Students, Peer Teaching, Physical Education

DOI: <https://doi.org/10.52188/ijpess.v6i3.2293>

©2026 Authors by Universitas Nahdlatul Ulama Cirebon



## Introduction

Character education is a central concern in contemporary schooling because education is expected to develop students not only intellectually, but also morally, socially, and behaviorally. Ultimately, character serves as the mindset and behavioral framework that shapes a person's capacity for cooperation across family, societal, and national contexts (Sari et al., 2024). Character refers to relatively stable dispositions that guide how individuals think, feel, decide, and act in relation to themselves and others (Malin et al., 2017; Watts & Kristjansson, 2022). In the school context, character education is understood as a deliberate pedagogical effort to cultivate values such as responsibility, respect, honesty, perseverance, and discipline through structured learning experiences (Anisah, 2023; Noddings, 2018; Singh, 2019). Among these values, discipline is especially important because it is closely related to students' ability to follow rules, regulate behavior, participate responsibly, and maintain a positive learning environment.

Discipline in school is not merely a matter of obedience or punishment. It is a developmental capacity that involves self-regulation, awareness of rules, responsibility toward tasks, and respect for collective order. Students who show discipline are more likely to arrive on time, follow instructions, complete learning tasks, maintain safety, and respect the rights of others during classroom activities. Conversely, weak discipline may lead to disruptive behavior, reduced learning engagement, poor classroom climate, and lower academic or social outcomes (Granero-Gallegos et al., 2020; Lumadi, 2025; Sunday, 2023). Therefore, schools need instructional strategies that do not only control behavior externally, but also provide students with opportunities to internalize discipline through meaningful participation.

Physical education is an appropriate context for developing discipline because it involves movement, rules, cooperation, competition, safety procedures, and direct social interaction. Modern physical education is not limited to the mastery of physical skills; it also contributes to cognitive, affective, social, and moral development (Pangrazi & Beighle, 2019; Siedentop & Mars, 2023). In physical education, students are required to listen to instructions, follow game rules, cooperate with peers, respect opponents, manage emotions, and take responsibility for their own bodies and learning tasks. These characteristics make physical education a strategic setting for character development when the teacher intentionally designs learning experiences that integrate physical, social, and affective goals.

Discipline is particularly important in physical education because learning takes place in an environment characterized by continuous movement, equipment use, transitions between activities, interpersonal interaction, competition, cooperation, and explicit safety rules. Under these conditions, students are expected not only to perform motor tasks but also to regulate their behavior, follow procedures, respect others, remain attentive, and take responsibility for their participation. Inadequate discipline may therefore have consequences beyond ordinary classroom disruption; it may reduce active learning time, interfere with instructional organization, weaken the social climate of the class, and potentially compromise safety during physical activity. Previous studies have also indicated that disruptive behavior is associated with unfavorable motivational and learning experiences in physical education and broader school contexts (Granero-Gallegos et al., 2020; Sunday, 2023). Accordingly, discipline should not be viewed merely as compliance demanded by the teacher, but as an affective learning outcome that needs to be intentionally developed through meaningful educational experiences.

Despite the potential of physical education to contribute to character development, an important pedagogical problem remains. Physical education practice may still emphasize motor performance, technical skill acquisition, and physical fitness more strongly than affective and character outcomes. When lessons rely predominantly on teacher commands and repetitive drills, students may comply with instructions because of external supervision while receiving fewer opportunities to practice responsibility, leadership, communication, self-control, and accountability. Such an instructional pattern creates a potential gap between the holistic objectives of physical education and the actual learning experiences provided to students. Therefore, instructional models are needed that allow discipline to develop not simply as externally controlled obedience but as behavior practiced through meaningful roles, interaction, and responsibility.

One model that may support discipline development is peer teaching. Peer teaching is an instructional model in which selected students assist their peers in understanding, practicing, and improving learning tasks under teacher supervision (Metzler, 2022; Topping et al., 2017). In this model, students may act as tutors, observers, demonstrators, feedback providers, or learning partners. The model allows students to learn from peers who share similar experiences, language, and developmental characteristics. It also provides meaningful opportunities for students to assume responsibility, communicate instructions, give feedback, follow peer guidance, and maintain task engagement. These processes are theoretically relevant to discipline because discipline grows when students are entrusted with roles, understand rules, and experience accountability within a social learning structure. Peer teaching provides a potentially relevant response to this pedagogical problem because it redistributes selected learning responsibilities from the teacher to students while maintaining teacher supervision. Students acting as peer tutors are required to communicate instructions, demonstrate tasks, provide feedback, remind peers of learning procedures, and model responsible participation. At the same time, students receiving peer support are expected to listen, cooperate, follow task procedures, and remain engaged. These reciprocal responsibilities provide opportunities for discipline to be practiced within the learning process rather than imposed solely through teacher control.

Previous studies have shown that peer teaching can support learning engagement, motivation, communication, social interaction, and learning performance across educational contexts. In physical education, however, much of the existing literature has emphasized skill acquisition, performance, inclusion, motivation, or broader affective outcomes. Discipline as a specific, directly observed behavioral outcome has received comparatively less attention, particularly among elementary-school students (Aburahma & Mohamed, 2017; AlShareef, 2020; Fuaddi et al., 2020; Sunday, 2023). This represents an important gap because discipline is a central component of character education and is closely aligned with the rule-based, interactive, and responsibility-oriented nature of physical education.

Based on this practical and empirical gap, the present study aimed to examine whether a structured peer teaching model was associated with higher discipline outcomes among fifth-grade students in physical education compared with regular teacher-led instruction without structured peer teaching. Specifically, the study compared discipline scores between the peer teaching and control groups across three instructional meetings. It was hypothesized that students participating in peer teaching would demonstrate higher discipline scores than students receiving non-peer teaching instruction. By examining observable discipline behaviors as a specific outcome, this study seeks to extend the application of peer teaching beyond motor-skill and performance outcomes and to contribute to the development of affective and character-oriented pedagogy in elementary physical education.

## Materials and methods

### Study participants

The accessible population consisted of all active fifth-grade students at SDN Tenjolaya 3. Because the total accessible population comprised 60 students, all eligible students were included in the study using a total sampling technique; therefore, no subsampling of the fifth-grade population was conducted. The final sample consisted of 60 students, including 24 boys and 36 girls, with an average age of approximately 11 years.

After participant inclusion, the 60 students were randomly allocated into two instructional groups. Thirty students were assigned to the experimental group receiving the peer teaching model, and the remaining 30 students were assigned to the control group receiving regular physical education instruction without structured peer teaching. Thus, total sampling was used for participant recruitment, whereas random allocation was used for group assignment. These two procedures were conducted for different methodological purposes: total sampling ensured that all members of the accessible population were represented, while random group allocation was used to reduce systematic allocation bias between the experimental and control groups.

### Study organization

This study used a quantitative experimental approach involving two groups: an experimental group that received the peer teaching model and a control group that received non-peer teaching physical education instruction. The research structure was consistent with a randomized posttest-only control group design; however, because discipline was observed at three instructional meetings, the outcome data were analyzed as repeated observations across the intervention period. Therefore, the design can be described as a two-group experimental design with repeated post-intervention observations during three physical education meetings. In this experiment, subjects were presented with several types of treatment and then the results were measured (Fraenkel et al., 2023) For more details can be seen in the following figure 1:

|                 |          |          |          |
|-----------------|----------|----------|----------|
| Treatment group | <i>R</i> | <i>X</i> | <i>O</i> |
| Control group   | <i>R</i> | <i>C</i> | <i>O</i> |

**Figure 1.** Randomize Posttest-Only Control Group Design

Information:

- R : Random group selection
- X : Treatment Group with Peer Teaching Model
- C : Untreated Control Group

The experimental group was taught using a peer tutoring model in physical education. In this model, teachers select or assign students to act as peer tutors during learning activities. Tutors help their classmates understand instructions, demonstrate movement tasks, guide exercises, remind peers of rules, and support learning participation. The teacher remains responsible for planning the lesson, explaining learning objectives, supervising tutor performance, ensuring safety, and providing corrective feedback when needed.

The implementation of peer tutoring was integrated into the physical education lesson sequence, including preparation, warm-up, main exercises, peer-led activities, feedback, and cool-down. Students acting as tutors were expected to demonstrate responsibility, communicate instructions clearly, and help peers stay engaged. Students acting as learners were expected to

follow peer guidance, adhere to lesson rules, practice diligently, and ask questions when instructions were unclear. Through this structure, discipline was operationalized not only as compliance with teacher instructions but also as responsibility within the peer-based learning role.

The control group received regular physical education instruction without a structured peer tutoring role. In this setting, the teacher provided instructions, organized activities, and directly controlled the learning process. Both groups attended physical education lessons in the same school setting, and the primary difference between the two groups was the use of structured peer tutoring in the experimental group.

Both groups received the same general physical education content, duration, and sequence over three sessions. Each session consisted of an introductory phase of approximately 15 minutes, a core learning phase of approximately 60 minutes, and a closing phase of approximately 15 minutes. The motor content focused on activities related to the game of basketball: Session 1 emphasized dribbling and passing drills, Session 2 emphasized chest passes, and Session 3 emphasized rebound passes. The primary difference between the two groups was the structure of the instructional roles. To clarify the instructional delivery for each group, see the following Table 1.

**Table 1.** Summary of Instructional Treatment in the Peer Teaching and Control Groups

| <b>Component</b>   | <b>Peer teaching group</b>                                                                                                  | <b>Control group</b>                                                      |
|--------------------|-----------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------|
| Duration           | Three meetings; each meeting approximately 135 minutes (15-minute introduction, 115-minute core activity, 5-minute closing) | Same duration and lesson phases                                           |
| Meeting 1 content  | Dribbling and passing activities guided by teacher-selected peer tutors                                                     | Dribbling and passing activities guided directly by the teacher           |
| Meeting 2 content  | Chest pass activities organized and supported by peer tutors                                                                | Chest pass activities organized and supported directly by the teacher     |
| Meeting 3 content  | Bounce pass activities explained and demonstrated with peer-tutor support                                                   | Bounce pass activities explained and demonstrated directly by the teacher |
| Affective emphasis | Discipline, responsibility, cooperation, communication, social interaction, helping behavior, respect, and no mocking       | Same affective emphasis without structured peer-tutor role                |
| Closing activity   | Cooling-down, line formation, prayer, discussion, and self-evaluation                                                       | Cooling-down, line formation, prayer, discussion, and self-evaluation     |

### ***Instrument of the study***

Student discipline was assessed using a structured behavioral observation sheet adapted from the Student Discipline Observation instrument developed by Wirantasa (2017). The adaptation was theoretically informed by concepts of discipline involving compliance with rules, self-control, responsibility, and social interaction (Hurlock, 2011; Lickona, 2016; Tu'u, 2014). These dimensions were operationalized into behaviors that could be directly observed during the learning process.

The observation sheet consisted of seven behavioral indicators: (1) punctuality in attending class, (2) compliance with school dress requirements, (3) carrying out scheduled

class-duty responsibilities, (4) punctuality in submitting assigned tasks, (5) maintaining attention while the teacher provided explanations, (6) refraining from disturbing classmates during the learning process, and (7) contributing to the maintenance of classroom order. Each behavioral indicator was evaluated using a three-level rating scale representing the extent to which the expected discipline behavior was demonstrated. The scoring framework differentiated between behavior that was not adequately demonstrated, behavior that was partially demonstrated, and behavior that was clearly demonstrated. The instrument was therefore treated as a behavioral-based assessment rather than a self-report measure because discipline was evaluated through students' directly observable behavior during learning.

Discipline was observed across the three instructional meetings. Scores from the behavioral indicators were combined to obtain discipline scores for each observation meeting, and accumulated scores across the three meetings were subsequently used for the overall between-group comparison.

The content relevance of the adapted observation instrument was addressed through a theory-based adaptation process. The behavioral indicators were mapped onto established dimensions of student discipline, namely compliance with rules, responsibility, self-control, and appropriate social behavior, drawing on the theoretical frameworks of [Hurlock \(2011\)](#), [Lickona \(2016\)](#), and [Tu'u \(2014\)](#). The instrument was also adapted from the Student Discipline Observation framework reported by [Wirantasa \(2017\)](#), with the indicators operationalized into behaviors considered observable within the school learning context.

Because the present instrument represented an adapted behavioral observation format, evidence concerning the reliability of the actual observations is particularly important. However, the archived research dataset did not contain separate ratings from two or more independent observers for the same students and observation occasions. Consequently, an inter-rater reliability coefficient could not be recalculated retrospectively for the present analysis. No unsupported reliability coefficient was therefore assigned to the adapted instrument.

### ***Statistical analysis***

The data were analyzed using descriptive and inferential statistics. Descriptive statistics included mean, standard deviation, minimum, maximum, frequency, and percentage. Shapiro-Wilk tests were used to examine the normality of total discipline scores, and Levene's test was used to examine homogeneity of variance. To evaluate differences across groups and observation meetings, a 2 x 3 mixed analysis of variance was conducted with group as the between-subject factor and meeting as the within-subject factor. To compare final accumulated discipline outcomes, an independent samples t-test was conducted using the total discipline score. Cohen's d was calculated to estimate the standardized mean difference, and partial eta squared was used for analysis of variance effect sizes. Statistical significance was set at  $p < .05$ .

### **Results**

The raw dataset included complete discipline scores for 60 students, with 30 students in the peer teaching group and 30 students in the control group. No missing values were identified in the three observation meetings or total scores. The corrected descriptive and inferential findings are presented below.

#### **Assumption Testing**

The Shapiro-Wilk test indicated that total discipline scores were normally distributed in both the peer teaching group ( $W = 0.976$ ,  $p = 0.717$ ) and the control group ( $W = 0.961$ ,  $p = 0.331$ ). Levene's test showed homogeneity of variance for total discipline scores,  $F(1, 58) = 0.090$ ,  $p = 0.765$ . Therefore, the assumptions for the independent samples t-test on total scores were met.

## Descriptive Statistics

Across the three observation meetings, the peer teaching group consistently obtained higher mean discipline scores than the control group. The peer teaching group increased from 12.30 +/- 1.29 in Meeting 1 to 17.50 +/- 1.11 in Meeting 3. The control group increased from 10.37 +/- 1.30 in Meeting 1 to 15.60 +/- 1.54 in Meeting 3. The accumulated total score was 44.00 +/- 3.83 in the peer teaching group and 38.83 +/- 3.48 in the control group.

**Table 2.** Descriptive Statistics of Discipline Scores by Group and Observation Meeting

| Group         | Variable  | Mean  | SD   | Minimum | Maximum |
|---------------|-----------|-------|------|---------|---------|
| Peer teaching | Meeting 1 | 12.30 | 1.29 | 10      | 15      |
| Peer teaching | Meeting 2 | 14.20 | 1.56 | 11      | 17      |
| Peer teaching | Meeting 3 | 17.50 | 1.11 | 14      | 19      |
| Control       | Meeting 1 | 10.37 | 1.30 | 7       | 13      |
| Control       | Meeting 2 | 12.87 | 2.18 | 9       | 17      |
| Control       | Meeting 3 | 15.60 | 1.54 | 13      | 18      |

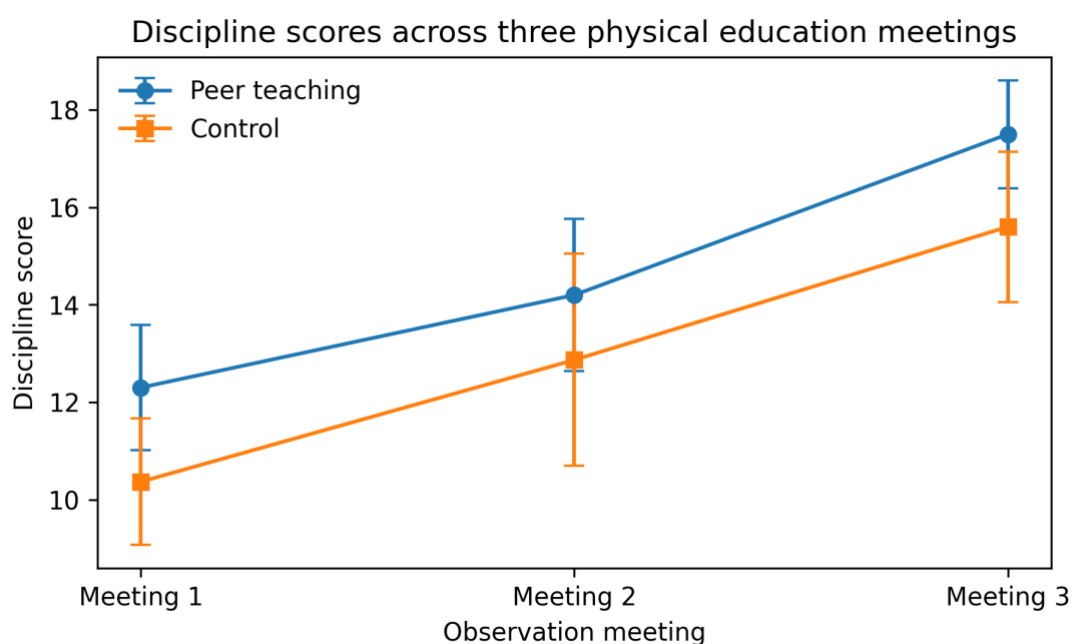


**Figure 2.** Mean discipline scores across three physical education meetings. Error bars represent standard deviations

## Discipline Category Distribution

The categorical distribution also showed a more favorable discipline profile in the peer teaching group. In the peer teaching group, 2 students (6.67%) were categorized as very good, 26 students (86.67%) as good, and 2 students (6.67%) as moderate. In the control group, 18 students (60.00%) were categorized as good and 12 students (40.00%) as moderate. No students in either group were classified as low or very low.

**Table 3.** Distribution of Student Discipline Categories by Group

| Category | Peer teaching n | Peer teaching % | Control n | Control % |
|----------|-----------------|-----------------|-----------|-----------|
| Very low | 0               | 0.00            | 0         | 0.00      |

|           |    |       |    |       |
|-----------|----|-------|----|-------|
| Low       | 0  | 0.00  | 0  | 0.00  |
| Moderate  | 2  | 6.67  | 12 | 40.00 |
| Good      | 26 | 86.67 | 18 | 60.00 |
| Very good | 2  | 6.67  | 0  | 0.00  |

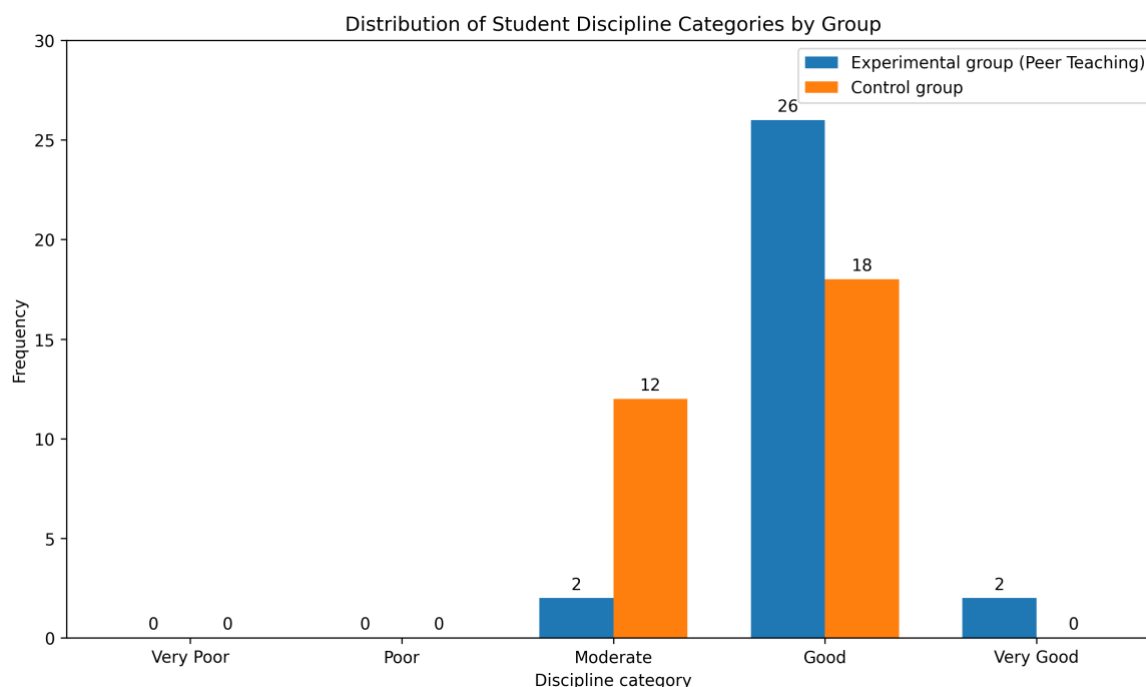


**Figure 3.** Distribution of Student Discipline Categories by Group

### Mixed Analysis of Variance

A 2 x 3 mixed analysis of variance showed a significant main effect of group,  $F(1, 58) = 29.845$ ,  $p < .001$ , partial eta squared = 0.340, indicating that the peer teaching group had higher discipline scores overall than the control group. There was also a significant main effect of meeting,  $F(2, 116) = 316.475$ ,  $p < .001$ , partial eta squared = 0.845, indicating that discipline scores increased across the three meetings. The group x meeting interaction was not significant,  $F(2, 116) = 1.312$ ,  $p = 0.273$ , partial eta squared = 0.022. This indicates that both groups showed an upward trend over time, but the peer teaching group maintained higher scores across the observation period.

**Table 4.** Mixed Analysis of Variance for Discipline Scores across Three Observation Meetings

| Source                   | SS      | df  | MS      | F       | p      | Partial eta squared |
|--------------------------|---------|-----|---------|---------|--------|---------------------|
| Group                    | 133.472 | 1   | 133.472 | 29.845  | < .001 | 0.340               |
| Meeting                  | 823.078 | 2   | 411.539 | 316.475 | < .001 | 0.845               |
| Group x Meeting          | 3.411   | 2   | 1.706   | 1.312   | 0.273  | 0.022               |
| Error (between subjects) | 259.389 | 58  | 4.472   | -       | -      | -                   |
| Error (within subjects)  | 150.844 | 116 | 1.300   | -       | -      | -                   |

### Comparison of Total Discipline Score

The independent samples t-test on total discipline scores confirmed a statistically significant difference between groups. The peer teaching group ( $M = 44.00$ ,  $SD = 3.83$ ) scored

higher than the control group ( $M = 38.83$ ,  $SD = 3.48$ ),  $t(58) = 5.463$ ,  $p < .001$ . The mean difference was 5.17 points, with a 95% confidence interval from 3.27 to 7.06. The effect size was large (Cohen's  $d = 1.41$ ; Hedges'  $g = 1.39$ ), indicating that the difference was not only statistically significant but also practically meaningful.

**Table 5.** Group Descriptives for Total Discipline Scores

| Group         | n  | Mean  | SD   | Minimum | Maximum |
|---------------|----|-------|------|---------|---------|
| Peer teaching | 30 | 44.00 | 3.83 | 35      | 51      |
| Control       | 30 | 38.83 | 3.48 | 32      | 45      |

**Table 6.** Independent Samples T-Test for Total Discipline Score

| Mean difference | 95% CI       | t     | df | p      | Cohen's d | Hedges' g |
|-----------------|--------------|-------|----|--------|-----------|-----------|
| 5.17            | 3.27 to 7.06 | 5.463 | 58 | < .001 | 1.41      | 1.39      |

## Discussion

The purpose of this study was to examine whether the peer teaching model produced higher discipline outcomes than regular physical education instruction among fifth-grade elementary school students. The results showed that the experimental group obtained higher discipline scores than the control group. The categorical findings also indicated that students in the peer teaching group were more concentrated in the good and very good discipline categories, whereas a larger proportion of students in the control group remained in the moderate category. These findings suggest that peer teaching is a promising instructional model for supporting discipline development in elementary physical education.

The positive effect of peer teaching on discipline can be interpreted through the responsibility structure embedded in the model. In peer teaching, students are not passive recipients of teacher commands. Some students are entrusted with the role of tutor, while others are positioned as active learners who must listen, respond, and practice under peer guidance. This role structure encourages students to understand their responsibilities, follow procedures, respect task boundaries, and maintain order during learning. Discipline is therefore developed through participation in social roles, not only through external control from the teacher. This interpretation is consistent with the view that responsibility and discipline are closely related because disciplined behavior emerges when students understand and accept the obligations attached to their learning roles (Elmesky & Marcucci, 2023; Krskova et al., 2019; Rino & Setiawan, 2025).

Peer teaching may also support discipline through peer accountability. In regular teacher-centered instruction, students may rely primarily on the teacher as the only authority figure. In contrast, peer teaching distributes responsibility across the learning group. Tutors remind peers about instructions, demonstrate expected behavior, and provide immediate support during practice. Learners, in turn, are expected to respect the peer tutor and remain engaged in the assigned task. This peer-based accountability may reduce off-task behavior because students are socially connected to the learning process. Prior literature suggests that peer teaching can strengthen interaction, communication, and engagement because students learn with and from peers who share similar experiences (Altnay, 2017; Cassell, 2022; Tenenbaum et al., 2020).

Another possible explanation is that peer teaching increases students' active participation. Discipline in physical education is closely linked to task engagement, attention, and compliance with activity rules. When students participate actively, they have more

opportunities to practice self-control, follow procedures, and complete tasks. The peer teaching model creates more interactional spaces for students to ask questions, receive feedback, demonstrate skills, and help classmates. These processes may strengthen students' sense of belonging and reduce passive waiting time, which is often associated with disruptive behavior in physical education settings. In this sense, peer teaching may contribute to discipline not only by giving rules, but also by creating a learning environment where students are meaningfully involved.

The findings are also aligned with the broader goals of physical education. Physical education is expected to develop students holistically, including movement competence, knowledge, attitudes, social skills, and character (Pangrazi & Beighle, 2019; Siedentop & Mars, 2023). The present results support the argument that physical education can be used as a pedagogical medium for character education when the teacher applies an instructional model that intentionally engages students in responsibility, cooperation, and rule-based activity. Therefore, the affective contribution of physical education should be planned, implemented, and assessed as deliberately as motor-skill learning.

Although the experimental group showed better outcomes, the control group also showed a descriptive increase across observation rounds. This may indicate that physical education itself, even without structured peer teaching, can still provide opportunities for discipline development through rules, routines, and teacher supervision. However, the stronger categorical profile and significant between-group difference in the experimental group suggest that peer teaching may provide additional pedagogical value beyond regular instruction. The key difference may lie in the explicit assignment of student roles and the presence of peer-mediated responsibility during learning.

From a practical perspective, the findings imply that physical education teachers should consider using peer teaching as part of their instructional repertoire, especially when the learning objectives include affective or character outcomes. However, peer teaching should not be implemented without preparation. Teachers need to select or rotate peer tutors carefully, provide clear tutor guidelines, monitor the accuracy of peer instruction, ensure safety, and create a classroom climate where peer tutors are respected but not positioned as substitutes for the teacher. Students also need to understand that peer teaching is not merely asking one student to lead others, but a structured learning model based on cooperation, responsibility, and mutual support.

Several limitations should be acknowledged. First, the study was conducted in one elementary school with a relatively small accessible population; therefore, generalization to other schools and educational contexts should be made cautiously. Second, the study did not include a baseline pretest before treatment. Consequently, although higher discipline scores were observed in the peer teaching group, the magnitude of individual change from the pre-intervention condition cannot be established. Third, the first discipline observation was conducted during the intervention period rather than before treatment, and the peer teaching group already demonstrated higher scores at the first observation. Fourth, although the discipline instrument was theoretically grounded and adapted from an existing discipline-observation framework, the archived dataset did not contain independent duplicate ratings. Therefore, inter-rater reliability could not be statistically evaluated, and potential observer-related measurement error cannot be excluded. Fifth, the intervention was limited to three instructional meetings. Longer interventions and follow-up assessments are required to determine whether the observed discipline outcomes are sustained over time.

Despite these limitations, the study contributes to the literature by providing empirical evidence that structured peer teaching may have pedagogical value for discipline development in elementary physical education. Rather than examining peer teaching solely in relation to motor performance or learning achievement, the present study positions observable discipline

as a specific affective and character-related outcome. Future research can build on these findings by using pretest-posttest randomized designs, larger multi-school samples, formal validation of the adapted discipline instrument, multiple independent observers with reported inter-rater reliability, longer intervention periods, and longitudinal follow-up. Such research would help determine whether the observed effects represent stable changes in student discipline and whether they can be generalized across different physical education settings.

## **Conclusions**

The study showed that fifth-grade students participating in physical education through the peer teaching model obtained higher discipline scores than students receiving regular teacher-led instruction without structured peer teaching. The peer teaching group also demonstrated a more favorable categorical discipline profile. These findings suggest that peer teaching may support discipline by creating structured opportunities for students to assume responsibility, follow learning procedures, communicate with peers, and participate actively in the learning process.

The findings extend the pedagogical application of peer teaching by highlighting its potential contribution to affective and character-oriented outcomes in elementary physical education. Nevertheless, the results should be interpreted cautiously because the study did not include baseline measurement, was conducted within one school, involved only three instructional meetings, and lacked independent observer ratings for the estimation of inter-rater reliability. Future research should therefore combine stronger experimental designs with formal validation of the adapted discipline observation instrument, independent observers, larger and more diverse samples, and longitudinal assessment to determine the robustness and sustainability of peer teaching effects on student discipline.

## **Acknowledgment**

An acknowledgements statement may contain detailing those who helped in carrying out the research but who have not been recognised as contributors, as well as personal expressions of gratitude.

## **Conflict of interest**

The authors declare no conflict of interest.

## **References**

- Aburahma, M. H., & Mohamed, H. M. (2017). Peer teaching as an educational tool in Pharmacy schools; fruitful or futile. *Currents in Pharmacy Teaching and Learning*, 9(6), 1170–1179. <https://doi.org/10.1016/j.cptl.2017.07.026>
- AlShareef, S. M. (2020). Comparing the impacts of reciprocal peer teaching with faculty teaching: A single-centre experience from KSA. *Journal of Taibah University Medical Sciences*, 15(4), 272–277. <https://doi.org/10.1016/j.jtumed.2020.05.006>
- Altınay, Z. (2017). Evaluating peer learning and assessment in online collaborative learning environments. *Behaviour & Information Technology*, 36(3), 312–320. <https://doi.org/10.1080/0144929X.2016.1232752>
- Anisah, A. (2023). Implementation Strengthening Education Character Student School Al-Anwar's Foundations Through School Culture. *Assyfa Journal of Islamic Studies*, 1(2 SE-Articles), 121–129. <https://doi.org/10.61650/ajis.v1i2.296>
- Cassell, J. (2022). Socially Interactive Agents as Peers. In *The Handbook on Socially Interactive Agents: 20 Years of Research on Embodied Conversational Agents, Intelligent Virtual Agents, and Social Robotics Volume 2: Interactivity, Platforms, Application* (1st ed., pp. 331–366). Association for Computing Machinery.

- <https://doi.org/10.1145/3563659.3563670>
- Elmesky, Rowhea, & Marcucci, Olivia. (2023). Beyond Cultural Mismatch Theories: The Role of Antiracism in School Discipline and Social Control Practices. *American Educational Research Journal*, 60(4), 769–809. <https://doi.org/10.3102/00028312231175858>
- Fraenkel, J. R., Wallen, N. E., & Hyun, H. H. (2023). How to Design and Evaluate Research in Education Eleventh Edition. In *McGraw-Hill Higher Education* (Eleventh E, Issue 0). McGraw-Hill.
- Fuaddi, Tomoliyus, Sukoco, P., & Nopembri, S. (2020). The Enjoyable Physical Education Learning to Improve Students' Motivation and Learning Achievement. *Physical Education, Sport and Health Culture in Modern Society*, 1(49). <https://doi.org/10.29038/2220-7481-2020-01-50-59>
- Granero-Gallegos, A., Gómez-López, M., Baena-Extremera, A., & Martínez-Molina, M. (2020). Interaction Effects of Disruptive Behaviour and Motivation Profiles with Teacher Competence and School Satisfaction in Secondary School Physical Education. In *International Journal of Environmental Research and Public Health* (Vol. 17, Issue 1, p. 114). <https://doi.org/10.3390/ijerph17010114>
- Hurlock, E. B. (2011). *Perkembangan Anak*. Rineka Cipta.
- Krskova, H., Breyer, Y., Baumann, C., & Wood, L. N. (2019). An exploration of university student perceptions of discipline: Introducing F.I.R.S.T. discipline principles. *Higher Education, Skills and Work-Based Learning*, 10(1), 61–82. <https://doi.org/10.1108/HESWBL-02-2019-0026>
- Lickona, T. (2016). *Educating for Character: Bagaimana Sekolah Mengajarkan Sikap Hormat dan Tanggungjawab*. PT. Bumi Aksara.
- Lumadi, R. I. (2025). Impact of learner behavior on academic performance: Leadership strategies for classroom dynamics and discipline management. *Social Sciences and Education Research Review*, 12(1), 237–244. <https://doi.org/10.5281/zenodo.15804550>
- Malin, H., Liauw, I., & Damon, W. (2017). Purpose and Character Development in Early Adolescence. *Journal of Youth and Adolescence*, 46(6), 1200–1215. <https://doi.org/10.1007/s10964-017-0642-3>
- Metzler, M. W. (2022). *Instructional Models For Physical Education* (4th editio). Routledge.
- Noddings, N. (2018). *Philosophy of education*. Routledge.
- Pangrazi, R. P., & Beighle, A. (2019). *Dynamic physical education for elementary school children*. Human Kinetics Publishers.
- Rino, P. P., & Setiawan, D. (2025). Disciplined Behaviour And Students' Responsibility Through The Role Of The Classroom Environment: A Qualitative Study. *JTP - Jurnal Teknologi Pendidikan*, 27(1 SE-Full Articles), 253–264. <https://doi.org/10.21009/jtp.v27i1.54148>
- Sari, W. A., Warni, H., & Arifin, S. (2024). The Role of Physical Education Sports and Health in Building Character. *Indonesian Journal of Physical Education and Sport Science*, 4(2 SE-), 204–211. <https://doi.org/10.52188/ijpess.v4i2.731>
- Siedentop, D., & Mars, H. van der. (2023). *Introduction ti Physical Education, Fitness, and Sport*. Human Kinetics.
- Singh, B. (2019). Character education in the 21st century. *Journal of Social Studies (JSS)*, 15(1), 1–12. <https://doi.org/10.21831/jss.v15i1.25226>
- Sunday, O. D. (2023). Creating Positive Classroom Climate for Secondary School Goal Attainment in Rivers State, Nigeria. *East African Scholars Journal of Education, Humanities and Literature*, 6(11), 555–561. <https://doi.org/10.36349/easjehl.2023.v06i11.006>

- Tenenbaum, H. R., Winstone, N. E., Leman, P. J., & Avery, R. E. (2020). How effective is peer interaction in facilitating learning? A meta-analysis. *Journal of Educational Psychology*, 112(7), 1303–1319. <https://doi.org/10.1037/edu0000436>
- Topping, K., Buchs, C., Duran, D., & Keer, H. van. (2017). *Effective Peer Learning: From Principles to Practical Implementation*. Routledge: Taylor & Francis Group.
- Tu'u, T. (2014). *Peran Disiplin Pada Perilaku dan Prestasi Siswa* (2nd ed.). Grasindo.
- Watts, P., & Kristjansson, K. (2022). Character Education. In R. Curren (Ed.), *Handbook of Philosophy of Education* (1st ed.). Routledge. <https://doi.org/https://doi.org/10.4324/9781003172246-17>
- 

**Information about the authors:**

**Veny Juniarni Hardi, M.Pd.:** [venyjh@stkippasundan.ac.id](mailto:venyjh@stkippasundan.ac.id), <https://orcid.org/0000-0003-1419-5526>, Department of Physical Education, Health and Recreation, STKIP Pasundan, Indonesia

**Dr. Deswita Supriatni, M.Pd.:** [deswitasupriyatni@stkippasundan.ac.id](mailto:deswitasupriyatni@stkippasundan.ac.id), <https://orcid.org/0000-0002-8826-8989>, Department of Physical Education, Health and Recreation, STKIP Pasundan, Indonesia

**Dr. Sumbara Hambali, M.Pd.:** [sumbara@stkippasundan.ac.id](mailto:sumbara@stkippasundan.ac.id), <https://orcid.org/0000-0003-2827-0128>, Department of Physical Education, STKIP Pasundan, Indonesia

---

**Cite this article as:**

Hardi, V. J. *et al.* (2026). The Effect of Peer Teaching on Elementary Students' Discipline in Physical Education. *Indonesian Journal of Physical Education and Sport Science (IJPESS)*, 6(3), 532-544. <https://doi.org/10.52188/ijpess.v6i3.2293>