



Effects of an eight-week peer-teaching Physical Education program on motor competence among primary school children

Efectos de un programa de Educación Física basado en la enseñanza entre iguales sobre la competencia motriz en escolares de primaria

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Received: 04-03-26
Accepted: 23-05-26

How to cite in APA

Nair, V. S., & Ramakrishnan, R. (2026). Effects of an eight-week peer-teaching Physical Education program on motor competence among primary school children. *Retos*, 82, 491-501. <https://doi.org/10.47197/retos.v82.118935>

Abstract

Purpose: Physical literacy is a critical aspect of motor competence. This study investigated the impact of an eight-week peer-teaching physical education program on motor competence in primary school children aged 5–7 years.

Methods: The sample comprised 100 children allocated to an Experimental Group ($n = 50$) or Control Group ($n = 50$) based on existing class sections. A mixed-methods quasi-experimental pre-test-post-test design was used. The Experimental Group completed an eight-week peer-teaching program three times weekly, whereas the Control Group received teacher-led physical education with the same frequency and duration. Motor competence was assessed using the Test of Gross Motor Development-Second Edition (TGMD-2). Data were analysed using independent-samples t -tests, paired-samples t -tests, ANCOVA, and thematic analysis.

Results: The Experimental Group showed significant improvements in locomotor skills (4.74 ± 2.46 to 6.70 ± 2.35), object-control skills (8.02 ± 3.63 to 9.74 ± 3.21), and gross motor composite scores (78.28 ± 13.99 to 89.44 ± 12.40) (all $p < .001$). The Control Group showed no significant changes ($p > .05$). ANCOVA identified significant between-group differences for all outcomes ($p \leq .001$). Qualitative findings indicated engagement, cooperation, role clarity, and implementation feasibility.

Conclusions: The peer-teaching physical education program was associated with improved locomotor skills, object-control skills, and gross motor competence. Peer teaching appears to be a feasible and beneficial approach for primary school physical education.

Keywords

Fundamental movement skills; motor competence; peer teaching; physical education; primary school children.

Resumen

Introducción: La alfabetización física constituye un componente esencial del desarrollo infantil y la competencia motriz favorece la participación en la actividad física. La enseñanza entre iguales ha despertado creciente interés en educación física.

Objetivo: Examinar los efectos de un programa de educación física basado en la enseñanza entre iguales de ocho semanas sobre la competencia motriz en escolares de 5 a 7 años.

Metodología: Se empleó un diseño cuasi experimental mixto con pretest y posttest. Participaron 100 escolares asignados a un Grupo Experimental ($n = 50$) y un Grupo Control ($n = 50$). El Grupo Experimental realizó un programa de enseñanza entre iguales tres veces por semana durante ocho semanas, mientras el Grupo Control recibió clases habituales dirigidas por el docente. La competencia motriz se evaluó mediante el Test of Gross Motor Development-Second Edition (TGMD-2). Los datos cuantitativos se analizaron mediante pruebas t y ANCOVA; los cualitativos, mediante análisis temático.

Resultados: El Grupo Experimental mostró mejoras significativas en habilidades locomotoras, control de objetos y puntuación compuesta de competencia motriz ($p < .001$). El Grupo Control no presentó cambios significativos. Los resultados cualitativos indicaron elevada participación, cooperación y viabilidad de implementación.

Conclusiones: La enseñanza entre iguales constituye una estrategia pedagógica viable y beneficiosa para mejorar la competencia motriz en escolares de educación primaria y promover una participación activa en educación física.

Palabras clave

Aprendizaje centrado en el estudiante; competencia motriz; educación física; enseñanza entre iguales; escolares de primaria; habilidades motrices fundamentales.

Introduction

Physical literacy has become a key concept in the physical education and promotion of youth physical activity. It includes the process of linking motivation, confidence, physical competence, knowledge and understanding together to help people develop a positive attitude towards physical activity and motivate them to participate in physical activity in their lives. (Whitehead 2010; Whitehead et al. 2018). Of these components motor competence is a fundamental and measurable component of physical literacy, as it is a building block for participation in sport, in active play and in lifelong physical activity (Cairney et al., 2019).

The first years of primary school are a time of critical development for the acquisition of basic movement skills. In this phase, children make rapid progress in their coordination and balance, their locomotor and object-control skills. Children with higher motor competence have been shown to be more likely to be physically active, feel positive about their physical competence and remain active during their later childhood and adolescence (Stodden et al., 2008; Robinson et al., 2015; Barnett et al., 2016). Therefore, the role of school physical education (PE) in the development of motor competence and supporting a lifelong involvement in physical activity is important.

Common teaching styles in traditional physical education have been teacher-centred, with teachers doing most of the demonstration, feedback, classroom management and skill teaching. While these methods offer an organized learning environment, they can restrict the opportunities for students to be autonomous and socially connected in their learning and to actively engage in skill practice (Metzler, 2017). By contrast however, current physical education research is increasingly focussed on student centred pedagogical methods that encourages collaboration, participation, co-responsibility and meaningful learning experiences between students (Casey & MacPhail, 2018).

Peer teaching, which has become a growing focus in physical education, is an approach that is student-centred. Peer teaching is a teaching strategy in which students are responsible for teaching and learning in a structured manner under the supervision of a teacher. The approach includes that peer tutors show skills, give feedback and provide guidance for practicing activities, and that the peer learners actively execute the skill and engage in collaborative learning activities. A theoretical underpinning for peer teaching comes from Social Cognitive Theory, which suggests that learning is through observation, modelling, social interaction and reciprocal influence of the person and environment (Bandura, 1986). Peer teaching in physical education can provide more practice time for students, provide immediate feedback, encourage social interaction and improve the level of student engagement in skill acquisition (Casey & Goodyear, 2015).

In physical education, positive educational effects of PAsL and PT have been previously reported such as motor skills performance, on task behaviour, cooperation and engagement of participants (Dyson et al., 2010; Hastie and Casey, 2014). These instructional benefits can be especially useful in early childhood when there are a number of repeated practice opportunities and timely feedback are crucial for developing essential movement skills.

Although there has been an increase in the study of student-centred pedagogies, there are some significant gaps in the literature. First of all, there have been few studies that have investigated the effectiveness of short-term peer-teaching interventions in regular school physical education classes. Secondly, there is limited evidence available for children aged 5-7 years, which is the most important development stage for motor competence. Third, numerous studies attempted to focus on instructional processes or on engagement or on the broader educational outcomes, rather than on motor competence outcomes. Last, very few studies have integrated quantitative measures of motor competence with qualitative measures of feasibility of implementation and student experiences of PE in real school physical education environments.

The aim of the present study was to investigate the effects of an eight-week peer-teaching physical education program on motor competence among primary school children aged 5–7 years. In addition, the study explored student engagement, role implementation, cooperation, and the feasibility of the peer-teaching model within regular physical education lessons through qualitative inquiry. Based on the study objectives and the literature reviewed, the following hypotheses were formulated: H1: The Experimental Group will demonstrate significant improvements in locomotor skills, object-control



skills, and gross motor composite scores from pre-test to post-test. H2: After controlling for baseline performance, the Experimental Group will achieve significantly higher post-test motor competence scores than the Control Group. H3: The peer-teaching physical education program will be perceived as feasible and will promote student engagement, cooperation, and active participation within the primary school physical education environment.

Method

The pre-test–post-test quasi-experimental design using a mixed method approach was used to investigate the impacts of an eight-week peer-teaching physical education program on motor competence among primary school children. Changes in motor competence outcomes were assessed using quantitative measures, while the data on student engagement, role implementation, cooperation, and feasibility of the peer-teaching model were collected using qualitative measures. The combination of quantitative data and qualitative data helped to triangulate results and achieve interpretative validity (Creswell & Plano Clark, 2018; Thomas et al., 2015).

Participants

A total of 100 primary school children aged 5–7 years participated in the study. There were 50 students in the Experimental Group (EG) and 50 students in the Control Group (CG). Overall, the sample included 61 boys (61.0%) and 39 girls (39.0%). A total of 31 boys and 19 girls were in the Experimental Group while 30 boys and 20 girls were in the Control Group. Participant characteristics at baseline are shown in Table 1.

Table 1. Baseline Participant Characteristics

Variable	Experimental Group (n = 50)	Control Group (n = 50)	Total (N = 100)
Age Range (years)	5–7	5–7	5–7
Boys, n (%)	31 (62.0)	30 (60.0)	61 (61.0)
Girls, n (%)	19 (38.0)	20 (40.0)	39 (39.0)
Total Participants, n (%)	50 (100)	50 (100)	100 (100)

Note. Participants were primary school children enrolled in regular physical education classes.

Group Allocation Procedure

This study took place at a natural school setting, and was administered by a class-based allocation procedure. Two similar classes were chosen from the same school. The Experimental Group (EG) was given a class section while the other class section was the Control Group (CG). This was done to reduce cross-contamination among groups during common PE sessions to keep school up and running. The school day, exposure and length of PE were the same for both groups during the intervention period.

Sample Size Justification

The study was conducted in a natural school setting using existing class sections. Therefore, a class-based convenience sampling approach was adopted. All eligible students from the selected classes who provided consent were included in the study (N = 100). No a priori power analysis was conducted; the sample size was determined by the number of available participants within the selected school.

Ethical Approval

The study was carried out after obtaining approval from the "Hindustan Institute of Technology and Science" Institutional Research Ethics Committee. Written informed consent was obtained from all parents/legal guardians prior to enrolment and verbal assent obtained from all children. There was no requirement to participate, and participants could drop out of the study at any time without any consequences. This project received ethical approval with Approval ID: HITS/CRC/004/20603034.

Quantitative Instrument

Motor competence was measured using the Test of Gross Motor Development – Second Edition (TGMD-2) (Ulrich, 2000), which is a standardized test designed to evaluate gross motor skill performance in



children aged 3-10 years. The TGMD 2 measures locomotor skills (run, gallop, hop, leap, horizontal jump and slide) and object-control skills (striking a stationary ball, stationary dribble, catch, kick, overhand throw, and underhand roll). For each skill, a criterion-referenced observational scoring system is used, with separate performance criteria dichotomously scored (0 = absent; 1 = present). Scores are added together to create locomotor scores, object-control scores and gross motor scores. The TGMD-2 has been shown to have acceptable inter-rater and test-retest reliability and to have good validity with school-aged children (Ulrich, 2000; Logan et al., 2012).

Assessor Training and Reliability

TGMD-2 assessments were conducted by trained physical education assessors experienced in administering and scoring the instrument. Prior to data collection, the assessors reviewed the TGMD-2 administration manual, scoring criteria, and performance indicators for each skill. Practice sessions were conducted to ensure familiarity with the assessment procedures and to promote consistency in scoring. The assessors were not blinded to group allocation because assessments were conducted within the natural school setting. However, standardized TGMD-2 administration procedures, scoring criteria, instructions, and testing protocols were consistently applied during both pre-test and post-test assessments to minimize potential assessment bias and ensure measurement consistency across testing sessions (Ulrich, 2000).

Qualitative Data Collection

Qualitative data was also gathered in order to explore student engagement, role clarity, co-operation and the feasibility of the peer teaching model in practice to complement the quantitative assessment of motor competence. The three qualitative sources used were. Participation, cooperation, adherence to role, feedback exchange and level of engagement were documented by completion of structured observation checklists during intervention sessions. The following age-appropriate questions, among others, were used to gather student reflections: Did your partner help you learn the skill? Was it easy to follow your partner's instructions? What did you enjoy most during the activity? Throughout the intervention period teacher field notes were kept to record the flow of the lesson, classroom management, student engagement, and difficulties in implementation.

Peer-Teaching Physical Education Program

The Experimental Group was involved in an eight-week peer teaching physical education program which was held three times weekly as indicated in Table 2. The overall length of each session was about 40 minutes, and involved warm-up, demonstration, guided practice, feedback from peers, repeated performance of the skill, and cool down activities. The students took turns to be the peer tutor or peer learner. Peer tutors under the teacher's direction provided corrective feedback—either simple or complex—and guided practice activities as well as demonstrated movement skills; peer learners actively engaged in skill practice and cooperative learning activities. All sessions were supervised by a qualified physical education teacher who ensured sessions were safe, accurate and managed well in the classroom.

Table 2. Peer-Teaching Physical Education Program Structure

Role	Activities	Duration
Peer Tutor	Demonstration of fundamental movement skills, practice guidance, corrective feedback	15 min/session
Peer Learner	Skill practice, cooperative learning, peer interaction	25 min/session
Teacher	Supervision, safety monitoring, instructional support, corrective feedback	Throughout session

Note. Sessions were conducted three times per week for eight consecutive weeks.

Intervention Fidelity

To promote intervention fidelity, all peer-teaching sessions followed a standardized lesson structure consisting of warm-up activities, skill demonstration, guided practice, peer feedback, and cool-down activities. A qualified physical education teacher supervised all sessions and ensured that the planned instructional procedures and peer-teaching activities were implemented consistently throughout the eight-week intervention period.



Control Group Description

The Control Group was engaged in regular teacher-led physical education lessons three (3) times a week for eight (8) weeks. These lessons took about 40 minutes and consisted of warm-up activities, teacher demonstration, movement practice, small group activities, and cool down activities. Different qualified physical education teachers delivered the Experimental and Control conditions. Both teachers followed the school's physical education curriculum, and instructional procedures were standardized throughout the study period.

Study Organization

The study was carried out in three stages. In Phase 1 (Pre-Test), all participants in both groups were tested for locomotor skills, object-control skills, and motor competence using the TGMD-2. In Phase 2 (Intervention), the Experimental Group received the eight-week peer-teaching program, and the Control Group received the regular teacher-led PE lessons. In Phase 3 (Post-Test), all children were tested again with the TGMD-2 and the testing conditions were the same.

Statistical Analysis

Quantitative Analysis

IBM SPSS Statistics Version 26.0 (IBM Corp., Armonk, NY, USA) was used to analyze quantitative data. All variables were analyzed with descriptive statistics (mean and standard deviation). Independent-samples t-tests were used to test for baseline equivalence between groups. Paired-samples t-tests were used to analyze within-group changes in pre-test to post-test scores. The effect size (ES) was computed by Cohen's d, and small (0.20), medium (0.50) and large (0.80) effect sizes were interpreted. Analysis of covariance (ANCOVA) was employed to compare post test scores between groups when there were differences between groups on the pre test. The pre test scores were entered as a covariate and the group (Experimental vs. Control) was considered as fixed factor. ANCOVA was chosen to control for the quasi-experimental design and to get the better estimate of the intervention effect. Partial eta squared (η^2p) was reported as an effect size and was interpreted as small effect sizes (between .01 and .06), and large effect sizes (between .07 and .14). The level of statistical significance was $p < .05$ (Field, 2018).

Qualitative Analysis

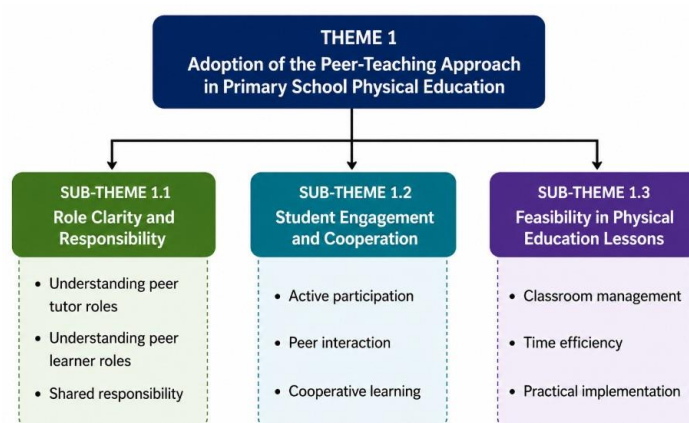
Thematic analysis was used in the analysis of qualitative data. Various iterations of observation records, student reflections, and teacher field notes were read over and over to achieve data familiarization. Inductive coding and grouping by meaningful units of text was used. Briefly, the categories were then grouped into general themes that identified patterns of student engagement, role clarity, cooperation, and feasibility of implementation. Triangulation was used among observation records, students' reflections and teachers field notes to improve the trustworthiness and credibility of the finding.

Results

Qualitative Findings

Theme 1: The use of the Peer-Teaching Approach in PE One main theme emerged from the thematic analysis of the peer-teaching model in the primary school physical education, which pertained to the implementation of the peer-teaching model in primary school physical education. The data revealed three sub-themes: (a) clarity of roles and responsibility, (b) engagement and cooperation of students, and (c) feasibility within the context of regular physical education lessons. Thematic relationships that emerged from observation records, student reflections and teacher field notes are shown in Figure 1.

Figure 1. Thematic representation of qualitative findings related to the adoption of the peer-teaching model in primary school physical education.



Sub-theme 1.1: Role Clarity and Responsibility

Overall, students' observation records showed that they had a grasp of the responsibilities they have as peer tutors and peer learners. Peer tutors modeled movement skills, offered simple corrective feedback, and directed practice activities; peer learners provided instructions and engaged in practice activities. This clear role structure seemed to facilitate lesson organization and minimise the need for ongoing teacher directions. The following were confirmed by student reflections. One child said, "My friend explained to me how to jump properly and when I got it wrong, he helped me." One student said, "I enjoyed the role of teacher because I could assist my partner to learn the skill."

Sub-theme 1.2: Student Engagement and Cooperation

Students were very engaged in the intervention and cooperative. The observation records showed that learners were engaged in the learning processes of skill practice and were encouraged to participate in activities frequently. Teacher field notes indicated that peer-led instruction provided more opportunities for interaction and participation of students of varying skill level. A student reflection was: "It was fun learning with my partner as we practised together." One participant responded: "My partner helped me when I made mistakes."

Sub-theme 1.3: Feasibility in Regular Physical Education Lessons

Teacher field notes showed that the peer-teaching model could be implemented in the context of normal PE class. The roles of peer tutor and peer learner were well organized and contributed to the efficient management of the lessons, and also ensured students' active participation. The students seemed to get the hang of their new duties after the first few sessions, and teachers noted that they took to the new role readily. On the other hand, although most students were able to make the transition to peer-teaching positions easily, some students needed further scaffolding from the teacher before they felt comfortable with the responsibility of peer tutoring. One teacher observation reported, "As the program went on students got more confident in giving feedback and they needed less direct instruction. A second field note noted, "The peer-teaching format worked within the time limits and did not interfere with the normal class organisation. Overall, the qualitative results indicated that students and teachers were positive about the peer-teaching approach, and that it was possible to be implemented in the regular primary school physical education lessons.

Quantitative Findings

Descriptive data for locomotor skills, object-control skills and gross motor composite scores of both the Experimental Group and the Control Group at pre-test and post-test are given in Table 3. After the peer-teaching intervention for eight weeks, the Experimental Group showed significant improvement on all of the outcome variables. The Control Group however, only experienced very small differences between pre-test and post-test assessments.

Table 3. Descriptive Statistics of Motor-Based Physical Literacy Outcomes (Pre- and Post-Test)

Dependent Variable	Experimental Group (n = 50)		Control Group (n = 50)	
	Pre-test M ± SD	Post-test M ± SD	Pre-test M ± SD	Post-test M ± SD
Locomotor Skills	4.74 ± 2.46	6.70 ± 2.35	4.72 ± 2.62	4.56 ± 2.82
Object-Control Skills	8.02 ± 3.63	9.74 ± 3.21	7.74 ± 3.13	7.90 ± 3.05
Gross Motor Composite	78.28 ± 13.99	89.44 ± 12.40	78.16 ± 13.50	77.92 ± 13.32

Note. M = Mean; SD = Standard Deviation.

The descriptive statistics for locomotor skills, object-control skills, and gross motor composite scores for both groups at pre-test and post-test are presented in Table 3. Independent-samples *t*-tests revealed no significant baseline differences between the Experimental Group and the Control Group for locomotor skills, $t(98) = 0.04$, $p = .969$, object-control skills, $t(98) = 0.41$, $p = .680$, and gross motor composite scores, $t(98) = 0.04$, $p = .965$. These findings indicate that the two groups were comparable prior to the intervention. Following the eight-week intervention, the Experimental Group demonstrated improvements in locomotor skills (4.74 ± 2.46 to 6.70 ± 2.35), object-control skills (8.02 ± 3.63 to 9.74 ± 3.21), and gross motor composite scores (78.28 ± 13.99 to 89.44 ± 12.40). The changes observed in the Control Group were minimal across all outcome variables.

Table 4. Pre-Test to Post-Test Comparisons Within Groups

Variable	Group	Mean Difference	t	p	Cohen's d
Locomotor Skills	Experimental	+1.96	6.85	< .001*	0.81
	Control	-0.16	-0.58	.565	0.06
Object-Control Skills	Experimental	+1.72	5.94	< .001*	0.50
	Control	+0.16	0.61	.545	0.05
Gross Motor Composite	Experimental	+11.16	8.32	< .001*	0.84
	Control	-0.24	-0.14	.889	0.02

Note. Cohen's d interpretation: small = 0.20, medium = 0.50, large = 0.80, $p < .05$.

The results of the motor competence scores before and after the 8-week intervention are shown in Table 4. The Experimental Group showed statistically significant gains in locomotor skills (Mean Difference = 1.96, $p < .001$), object-control skills (Mean Difference = 1.72, $p < .001$) and gross motor composite skills (Mean Difference = 11.16, $p < .001$). The respective effect sizes were from moderate to large (Cohen's $d = 0.50$ -0.84), which are considered meaningful improvements in motor competence. However, no statistically significant differences were observed in locomotor skills ($p = .565$), object-control skills ($p = .545$) and gross motor composite scores ($p = .889$) in the Control Group. There were no significant changes over the intervention period for the Control Group, and the effect sizes were trivial, ranging from $d = 0.02$ to 0.06. In general, the results show that involvement in the peer teaching physical education program led to significant improvements in primary school children's fundamental movement skills and overall motor competence.

Table 5. ANCOVA Results Comparing Post-Test Scores Between Groups After Controlling for Pre-Test Scores

Dependent Variable	Source	df	F	p	Partial η^2
Locomotor Skills	Group	1, 97	16.82	< .001*	.148
Object-Control Skills	Group	1, 97	11.74	.001*	.108
Gross Motor Composite	Group	1, 97	21.36	< .001*	.180

Note. Partial η^2 interpretation: Small = .01, Medium = .06, Large = .14, $p < .05$.

The Analysis of Covariance (ANCOVA) results presented in Table 5 showed significant differences between the Experimental Group and the Control Group in post-test motor competence outcomes after controlling for baseline scores. The scores on locomotor skills were significantly higher in the Experimental Group than the Control Group on the adjusted post-test ($F(1,97) = 16.82$, $p < .001$, partial $\eta^2 = .148$). Similarly, significant group differences were observed for object-control skills ($F(1,97) = 11.74$, $p = .001$, partial $\eta^2 = .108$) and gross motor composite scores ($F(1,97) = 21.36$, $p < .001$, partial $\eta^2 = .180$). According to the conventional benchmarks, locomotor skill and gross motor composite scores had large effect sizes while object-control skills had moderate to large effect size. These results have shown that, after controlling for pre-test motor competence scores, students in the peer teaching intervention group scored higher on the post-test motor competence than students from the Control



Group. It should be noted that the gross motor composite score is derived from the locomotor and object-control subscale scores of the TGMD-2 and therefore does not represent an independent motor competence outcome. Improvements in the gross motor composite score reflect corresponding changes in these constituent motor skill domains.

Discussion

The present study investigated the impact of an eight-week PE intervention based on peer teaching on children's motor competence in Primary School ages 5–7. The results indicated that the locomotor skills, object-control skills, and gross motor composite scores of the students who received the peer-teaching intervention did show statistical differences. Students receiving PE instruction with a teacher-led approach demonstrated little change on the outcome measures, in contrast. ANCOVA analyses also revealed that the Experimental Group had significantly higher post test scores compared to the Control Group when the baseline score was controlled. The qualitative results supported the quantitative results and explained students' engagement, role clarity, cooperative learning behaviours, and the practicality of incorporating peer teaching in the regular PE class.

Several instructional attributes of the peer-teaching method may be related to the improvements in motor competence noted. Peer teaching offers further opportunities for children to practice, repeat the skills and receive instant feedback in the learning task. There is recent evidence that good structured school physical activity and physical education (PA/PE) programmes can enhance children's motor competence when they offer enough opportunities for practice and appropriate learning experiences (Lorås, 2020; Moon et al., 2024). In this current study, students took turns being the peer tutor and the peer learner, so that they would learn both by observation and by doing. This may have improved the focus on how to move and led to more opportunities for feedback to be given on the correct way to perform the movement whilst practicing.

The present results align with the latest research literature advocating for cooperative and peer-assisted teaching in PE. Cooperative learning has been equated with a pedagogic method which could foster interaction, collective responsibility and meaningful student involvement during physical education context (Casey & Quennerstedt, 2020; Zhou et al., 2023). Likewise, current studies on peer-teaching in physical education indicate that peer-assisted teaching helps student motor skill learning, involvement, self-confidence, and teamwork (Tanır, 2025). The present results add to this evidence by documenting the impact of an 8-week intervention of peer teaching on motor competence in younger grade levels of primary school children when integrated into the regular school physical education class.

The use of quantitative and qualitative evidence is one of the significant contributions of this present work. The quantitative results showed gains in locomotor and object-control skills, and the qualitative results showed the participants' experiences of the intervention. Student observation records and teacher field notes indicated that students generally knew their role in the instruction, actively participated in practice activities, and exhibited cooperative behaviors during the intervention. Student feedback also suggested a positive attitude towards peer learning. This is in line with previous studies that have demonstrated the effectiveness of cooperative learning in physical education for promoting engagement, social interaction, and adaptable learning experiences for students (Rivera-Pérez et al., 2021; Zhou et al., 2023).

In addition, several alternative interpretations of the findings have to be considered. The quasi-experimental design does not allow for the making of any definitive causal conclusions, although the Experimental Group showed better results than the Control Group. Other factors may have influenced the results obtained in the classroom: teacher influence, peer interactions, student motivation, and classroom dynamics. Thus, the results should be interpreted as an association between participation in the peer-teaching programme and improvements in motor competence rather than as evidence of a causal relationship.

The results have implications for physical education teachers and schools. Peer teaching is a low cost and feasible pedagogical approach that can be adopted by the current physical education classroom without extra facilities or equipment. Structured peer teaching activities can enhance opportunities for active participation and peer interaction, which can be helpful to teachers to deal with large classes and



provide support for motor skill development. This is important because a recent meta-analysis by Moon et al. (2024) and Barnett et al. (2022) suggest that school-based physical activity interventions can have a positive impact on motor competence in children, but the results depend on the type of intervention, setting, and the quality of implementation.

The following limitations should be acknowledged. First, the study employed a quasi-experimental design and did not involve random assignment of class sections, which may have introduced selection bias. In addition, the assessors were not blinded to group allocation, which may have introduced assessment bias despite the use of standardized assessment and scoring procedures. Furthermore, no a priori power analysis was conducted, and the sample was derived from existing class sections within a single school. Therefore, caution should be exercised when generalizing the findings to other populations and educational settings. Secondly, the study was carried out in a single school, so the findings are not necessarily transferable to other settings. Third, the intervention was short-term (8 weeks) and longer-term effects were not evaluated. Fourthly, standardized assessment procedures were employed, but subjectivity by the assessor cannot be ruled out. Lastly, the research was limited to motor competence outcomes and neglected to investigate the affective, cognitive and behavioural aspects of physical literacy. Future studies should use a randomized controlled design, involve multiple schools, assess longer intervention periods and use a multidimensional approach to physical literacy assessment. The results in total indicate that a structured programme of peer teaching physical education could lead to gains in motor competence in primary school children. Peer teaching is a potentially useful and interesting pedagogical approach in primary school PE, supported by both quantitative and qualitative evidence.

Conclusions

The aim of this study was to investigate the impact of an eight-week physical education program based on peer-teaching on the motor competence of primary school children (5-7 years). The students who were involved with the peer teaching intervention had a significantly greater increase in locomotor skills, object control skills, and gross motor composite scores than the Control Group did. Qualitative results also revealed that students were engaged, cooperative, knowledgeable about their role, and that it was feasible in regular P.E. lessons. The results from this quasi-experimental study and single school context should be viewed with caution. However, the findings imply that there could be a relationship between attending a structured PE peer teaching programme and motor competence among primary school children. Future research through randomized controlled designs, larger samples, multiple school sites, and longer test periods are suggested to validate and expand upon the findings.

Acknowledgements

The authors would like to thank the school administration, physical education teachers, students and parents for their support and participation in this study.

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