

# Analysis of the Traditional Game "Engklek" on the Improvement of Physical Fitness and Motor Skills of Third Grade Students at SD Negeri 02 Keli Rejo

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## Abstrak

Penelitian ini bertujuan untuk menganalisis pengaruh permainan tradisional engklek terhadap peningkatan kebugaran fisik dan keterampilan motorik siswa kelas III di SD Negeri 02 Keli Rejo. Permainan tradisional engklek merupakan aktivitas fisik yang menyenangkan, ekonomis, dan bernilai budaya yang dapat digunakan sebagai media dalam pembelajaran Pendidikan Jasmani, Olahraga, dan Kesehatan (PJOK) untuk mengembangkan keterampilan motorik siswa. Metode yang digunakan dalam penelitian ini adalah quasi-eksperimental dengan desain kelompok kontrol pra-tes dan pasca-tes. Sampel terdiri dari dua kelompok, yaitu kelompok eksperimen yang menerapkan permainan engklek dan kelompok kontrol yang menggunakan metode pengajaran konvensional. Alat ukur yang digunakan dalam penelitian ini meliputi tes kognitif dan pengamatan psikomotorik untuk menilai tingkat pemahaman dan keterampilan motorik dasar siswa. Hasil penelitian menunjukkan peningkatan yang signifikan pada aspek kebugaran fisik dan motorik siswa setelah penerapan pembelajaran berbasis permainan tradisional engklek. Temuan ini membuktikan bahwa permainan tradisional dapat menjadi metode efektif dalam meningkatkan kemampuan fisik dan koordinasi motorik anak-anak serta membangun nilai-nilai sosial seperti kerja sama, disiplin, dan sportivitas. Oleh karena itu, disarankan agar guru PJOK memanfaatkan permainan tradisional sebagai alternatif dalam menyajikan pembelajaran aktif yang bermakna dan menyenangkan bagi siswa di tingkat sekolah dasar.

**Kata kunci:** Permainan Tradisional, Kebugaran Fisik, Keterampilan Motorik

## Abstract

This study aims to analyze the effect of the traditional game of engklek on improving the physical fitness and motor skills of third-grade students at SD Negeri 02 Keli Rejo. The traditional game of engklek is a fun, economical, and culturally valuable physical activity that can be used as a medium in Physical Education, Sports, and Health (PJOK) learning to develop students' motor skills. The method used in this study was a quasi-experimental with a pretest-posttest control group design. The sample consisted of two groups, one was the experimental group that implemented the engklek game, and the other was the control group that used conventional teaching methods. The instruments used in the study included cognitive tests and psychomotor observations to assess the level of understanding and basic motor skills in students. The results showed a significant increase in students' physical and motor fitness aspects after the implementation of learning based on the traditional game of engklek. These findings prove that traditional games can be an effective method in improving children's physical abilities and motor coordination as well as building social values such as cooperation, discipline, and sportsmanship. Therefore, it is recommended that PJOK teachers utilize traditional games as an alternative in delivering meaningful and enjoyable active learning for students at the elementary school level.

**Keywords:** Traditional Games, Physical Fitness, Motor Skills

## 1. INTRODUCTION

Physical Education, Sports, and Health (PJOK) are an educational activity designed to improve students' physical fitness, motor skills, cognitive understanding of sports, and social-

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emotional development through various physical activities (Mahendra, 2019; Sudiana, 2019). In this learning process, students are not only taught how to move but also learn through movement to build healthy, active, and sportsmanlike character (Susanto, 2019; Arifin, 2020). However, in today's digital era dominated by technology, traditional games have been increasingly replaced by gadget-based and internet-dependent games (Putri, 2022). Many children no longer recognize traditional games, which are a vital part of Indonesia's cultural heritage passed down from generation to generation (Setyawan, 2023; Wulandari, 2023). Compared to modern games, which tend to be more individualistic, traditional games offer greater opportunities to develop children's motor and cognitive skills (HP Yudiwinata, 2014; Rofiq, 2021).

Traditional games are valuable cultural legacies rich in educational, social, and physical values (Gandasari, 2019; Setiawan, 2020). Amid rapid technological development, many traditional games have been forgotten by students, even though they have great potential as engaging learning tools, especially in PJOK (Budiman, 2021). One such game still played in several Indonesian regions is engklek—a hopping game played on a drawn pattern on the ground or floor (Fitriani, 2020). This game not only trains children's gross motor skills but also enhances physical fitness (Lanos & Muchsin, 2024). In PJOK, engklek can be used as a medium to improve basic movement skills, strengthen leg muscles, and train focus and precision (Utomo, 2021). Children with poor visual-motor coordination often face difficulties performing movements that synchronize vision and motion (eye-hand or eye-foot coordination) (Hasanah, 2022). Thus, engklek serves as an enjoyable tool to develop coordination. Typically played by four to six players, the game teaches discipline, responsibility, and teamwork (Indriyani et al., 2021; Setiawan, 2020).

According to Gandasari (2019), traditional games, also known as folk games, are recreational activities aimed not only at entertainment but also at fostering social bonds and relationships. Therefore, incorporating traditional games into PJOK learning can significantly improve students' physical fitness and motor skills while preserving cultural values (Setyawan, 2023). Physical fitness refers to an individual's ability to perform daily physical activities without undue fatigue and still have enough energy for other tasks (Santoso, 2019). Through regular physical exercise, whether light or strenuous, one can progressively improve cardiovascular endurance and muscle performance (IK Sudiana, 2014; Rahayu, 2021). Engklek is not merely a form of recreation but an effective physical education tool to enhance students' physical fitness in elementary schools (Fauzi, 2020; Fitriani, 2020). Due to its simplicity, affordability, and enjoyable nature, engklek is suitable for physical training in PJOK classes (Kurniawan, 2019). Among 33 traditional games studied, Iswinarti (2010) found that engklek is one of the most popular among children because of its complex and varied movement patterns (Iswinarti, 2021). The game involves hopping on drawn boxes on flat ground in a specific sequence, requiring balance, coordination, and strength (Dasrun, 2013).

Motor skills are a person's ability to perform coordinated movements involving the nervous system, muscles, and brain to produce purposeful physical activity (Nurhasan, 2020). According to Sugiyanto (2019), motor skills refer to the use of body muscles to perform activities such as walking, running, jumping, and throwing. Playing engklek provides numerous benefits, including improving balance, motor coordination, creativity, and social interaction (Devana, 2017; Ramadhan, 2021). Therefore, the engklek traditional game is an effective and enjoyable learning medium to develop elementary students' motor skills, especially coordination, balance, agility, and muscle strength (Lanos & Muchsin, 2024;

Utomo, 2021). In addition to enhancing physical capabilities, it also supports children's social and emotional development (Setiawan, 2020; Wulandari, 2023).

## 2. METHOD

This research utilized a quantitative quasi-experimental design with a pretest–posttest control group framework (Arikunto, 2021; Nugroho, 2020). The study aimed to examine the effect of engklek game-based learning by comparing changes in students' scores before and after the intervention between the experimental and control groups. According to Gunawan (2023), gain scores derived from pretest and posttest results can measure effectiveness, and statistical tests can determine the significance of observed differences. The study focused on three variables: the independent variable ( $X_1$ : engklek-based learning) and two dependent variables, namely physical fitness ( $Y_1$ ) and motor skills ( $Y_2$ ).

Both groups underwent a pretest to assess their initial abilities (Pradana, 2022). The experimental group participated in engklek-based lessons, whereas the control group followed standard PJOK instruction (Fauzi, 2020). After completing several weeks of intervention, both groups took posttests to evaluate learning outcomes (Gunawan, 2023). Data collection involved a cognitive test to assess students' understanding of fundamental motor movements and physical fitness (Arifin, 2020), alongside a psychomotor observation sheet to evaluate practical performance (Sugiyanto, 2019).

The study emphasized revitalizing cultural values in education through the traditional game of engklek, which has meaningful benefits for children's development (Setyawan, 2023). Conducted at SD Negeri 02 Keli Rejo, Belitang II District, OKU Timur Regency, the participants were third-grade students. Both the PJOK teacher and the researcher monitored students' performance using cognitive assessments and psychomotor observation sheets, focusing on coordination, balance, agility, and muscular strength (Laksana, 2022). The data analysis compared pretest and posttest results to determine the impact of the intervention (Gunawan, 2023).

The research not only examined the effectiveness of engklek-based learning but also provided a practical experience of integrating cultural games into physical education. By observing students, the study highlighted how a simple traditional game like engklek can enhance motivation, physical fitness, motor skill development, and teamwork among children, supported by the cooperation of the school, teachers, and students (Wijaya, 2023).

**Table 1.** *In some instrument*

No	Basic Competencies	Question Indicators	Main Material	Cognitive Domain (Bloom)	Question Format	Question Number
1	3.1 Understand the concept of basic movement in various physical activities	Explaining the meaning of basic locomotor, non-locomotor, and manipulative movements	Basic motor movements	C1 (Remember)	Multiple choice	1

2	3.2 Analyzing basic movement forms in simple games	Identifying examples of locomotor, non locomotor, and manipulative movements in small ball games	Basic motor movements in games	C2 (Understand)	Multiple choice	2
3	3.3 Understanding the components of physical fitness	Explain the main components of physical fitness (endurance, strength, agility, speed, flexibility)	Components of physical fitness	C2 (Understand)	Multiple choice	3
4	3.4 Analyzing the relationship between physical activity and physical fitness	Determining the relationship between exercise intensity and improvement in physical fitness	The relationship between exercise and fitness	C4 (Analyzing)	Multiple choice	4
5	3.5 Evaluating the benefits of basic movements on physical fitness	Assess the importance of implementing correct basic movements to maintain physical fitness.	Basic movement applications in fitness	C5 (Evaluate)	Multiple choice	5

### 3. RESULT AND DISCUSSION

#### Result

##### 3.1 Physical Fitness Outcomes

The implementation of engklek-based learning in PJOK lessons led to significant improvements in students' physical fitness. Table 2 presents the pretest and posttest scores for physical fitness components, including coordination, balance, agility, and endurance. The experimental group showed higher gains compared to the control group.

**Table 2.** Physical Fitness Pretest–Posttest Scores

Group	N	Pretest Mean (SD)	Posttest Mean (SD)	Gain Score (Post – Pre)
Experimental (Engklek)	20	55.3 (4.2)	78.6 (3.9)	23.3
Control (Conventional PJOK)	20	54.7 (4.5)	62.1 (4.1)	7.4

The gain scores indicate that students participating in engklek-based activities improved more than those in conventional PJOK lessons, particularly in agility and endurance due to repeated hopping and dynamic movements inherent in the game.

### **3.2 Motor Skill Development**

Motor skill performance, including locomotor, non-locomotor, and manipulative skills, was assessed using a psychomotor observation sheet. Table 3 shows the pretest and posttest mean scores for motor skills.

**Table 3.** *Motor Skill Pretest–Posttest Scores*

Group	N	Pretest Mean (SD)	Posttest Mean (SD)	Gain Score
Experimental (Engklek)	20	50.8 (5.1)	75.2 (4.8)	24.4
Control (Conventional PJOK)	20	51.2 (4.9)	61.5 (5.0)	10.3

The results show that the experimental group experienced a greater increase in motor skill scores, reflecting improved coordination, balance, and precision through the engklek game.

### **3.3 Cognitive Outcomes**

Cognitive assessment focused on students' understanding of basic motor movements and the components of physical fitness (see Table 1). Table 4 summarizes the pretest and posttest scores for cognitive understanding.

**Table 4.** *Cognitive Pretest–Posttest Scores*

Group	N	Pretest Mean (SD)	Posttest Mean (SD)	Gain Score
Experimental (Engklek)	20	58.5 (4.0)	81.0 (3.6)	22.5
Control (Conventional PJOK)	20	57.9 (4.3)	64.8 (4.2)	6.9

These results suggest that engklek-based lessons enhance students' comprehension of basic movements and physical fitness concepts more effectively than conventional instruction.

## **Discussion**

The findings of this study indicate that the implementation of the traditional game engklek in PJOK lessons has a significant positive effect on students' physical fitness and motor skills. Students in the experimental group demonstrated notable improvements in coordination, balance, agility, and endurance compared to the control group, which followed conventional learning methods (Budiman, 2021; Dasrun, 2013; Fitriani, 2020; Lanos & Muchsin, 2024). These physical enhancements can be explained by the dynamic and repetitive hopping movements in engklek, which actively engage multiple muscle groups and stimulate cardiovascular performance (Utomo, 2021; Santoso, 2019).

In line with previous research, the results support the notion that engklek is a popular and physically engaging traditional game for children, capable of promoting motor development and fitness (Iswinarti, 2010; Dasrun, 2013). Beyond physical benefits, the study highlights

the cognitive and psychosocial advantages of integrating engklek into lessons. Students exhibited higher levels of concentration, motivation, and enjoyment during learning activities, consistent with findings by Rofiq (2021) and Laksana (2022), who emphasized that game-based learning increases engagement and participation. Furthermore, the social component of the game encouraged teamwork, discipline, and responsibility, echoing prior studies on the role of traditional games in fostering cooperation, emotional growth, and creativity (Gandasari, 2019; Devana, 2017).

Overall, these results suggest that integrating engklek into PJOK learning is an effective strategy for simultaneously improving physical fitness, motor coordination, and social interaction among school-aged children (Budiman, 2021; Setyawan, 2023). Additionally, the use of engklek preserves cultural heritage while supporting holistic physical and cognitive development (Wijaya, 2023; Kurniawan, 2019). This study demonstrates that traditional games can serve as cost-effective, culturally relevant, and pedagogically valuable tools in elementary physical education, offering both physical and psychosocial benefits that conventional methods may not fully provide.

#### **4. CONCLUSION**

The implementation of the traditional game engklek in PJOK lessons effectively improves the physical fitness and motor skills of elementary school students. Students who participated in engklek-based learning demonstrated significant gains in coordination, balance, agility, and endurance compared to those who followed conventional lessons.

In addition to physical improvements, engklek-based learning also enhances cognitive and psychosocial outcomes, including increased concentration, motivation, enjoyment, teamwork, discipline, and responsibility. The game creates a fun and engaging learning environment, making lessons less monotonous and more effective for skill development.

Furthermore, incorporating engklek into physical education supports the preservation of cultural heritage while promoting holistic child development. The study concludes that engklek is a cost-effective, culturally relevant, and pedagogically valuable tool that integrates physical, motor, cognitive, and social growth in elementary school students.

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