



Transformation of traditional games as an innovative method to enhance student learning motivation

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Abstract: This quantitative study investigates the effectiveness of transforming traditional games into innovative instructional media to enhance elementary school students' learning motivation in Physical Education, Sports, and Health (PJOK). Utilizing a one-group pretest–posttest design, the research was conducted with 40 fifth-grade students at SD Nurul Ulum, Surabaya, during the 2024/2025 academic year. The intervention comprised five PJOK sessions integrating modified versions of gobak sodor, boy-boyan, benteng-bentengan, and lari balok. Motivation was measured using a 29-item questionnaire, which demonstrated excellent reliability ($\alpha = 0.90$). Data analysis via SPSS included tests for normality (Kolmogorov–Smirnov, Shapiro–Wilk) and a one-sample t-test for pre- and post-intervention scores. Results revealed a significant increase in motivation, with mean scores rising from 70.18 (SD = 3.67) to 89.33 (SD = 2.96), $p < 0.05$. This implies that the enjoyable, collaborative, and culturally contextual nature of transformed traditional games effectively fosters intrinsic motivation and supports culturally relevant pedagogy. The study concludes that integrating traditional games into PJOK is a viable innovative method to boost student motivation, preserve local cultural values, and enrich learning experiences. This result strengthens the urgency of integrating local culture in elementary school learning, as well as being a concrete step in supporting the Merdeka Learning policy that emphasizes the meaningfulness, diversity, and relevance of learning.

Keywords: traditional games, learning motivation, PJOK, instructional innovation, elementary education

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INTRODUCTION

The challenge amidst the rapid flow of digital games is that many noble values contained in traditional games are starting to be neglected. In fact, traditional games not only provide physical and social enjoyment but are also rich in educational values, such as honesty, sportsmanship, responsibility, and cooperation (Nadziroh, Chairiyah, 2019). Traditional games are believed to be an effective means to strengthen learning motivation while also instilling positive character in children. Additionally, one of the challenges still faced in Physical Education, Sports, and Health (PJOK) learning is the low participation of students in physical activities due to teaching methods that are less engaging and not aligned with the characteristics of elementary school-aged children (Nurkadri et al., 2022).

Traditional games have an important role as a solution to increase children's physical activity while preserving local culture (Afifah Maulidiyyah & Purwoko, 2023). Students can engage dynamic movement and active social interaction, traditional games can be a fun alternative to encourage children to move more, thus helping to improve their physical fitness. One of the reasons why traditional games need to be brought back is because of their interactive and collaborative nature (Mudzakir, 2020). This game makes students learn to work together, communicate, and develop a sense of mutual respect. Through the interactions that occur during the game, they can build positive social relationships, which are crucial in their emotional and social development (Syihabbudin & Umami, 2021). In addition, through this game, cultural values and ancestral heritage are maintained, providing dual benefits for children's development and the preservation of traditions (Nally et al., 2022). The physical education context of traditional games can be an attractive alternative to increasing student participation in physical activity. Monotonous learning methods often cause students to lose interest, while traditional games offer variety and fun that can grab their attention (Shah et al., 2024). Teachers can adapt traditional games into learning so that students are more enthusiastic and actively participating. Traditional games that are often played include gobak sodor, boy-boyan, benteng-bentengan, and lari balok.

Learning motivation is one of the psychological aspects that is very important in supporting the success of students in following the learning process, including in the subject of Physical Education, Sports, and Health (PJOK) (Marliani, 2020). Learning motivation can be influenced by various factors, one of which is the learning approach used by teachers (Sardiman,

2012). One alternative innovative approach in PJOK learning is the use of traditional games. Traditional games have educational, social, and cultural values that can be used in learning activities (Hidayat, 2019). Various studies have revealed that traditional games are able to increase physical activity (Fitriyani & others, 2020), motor skills (Astuti, 2021), to student learning motivation. In addition, traditional games also develop students' cooperative skills, sportsmanship, and social intelligence (Hasanah, 2022).

Some studies emphasize that the application of traditional games can increase motivation to learn through aspects of fun, challenge, and emotional involvement of students in the learning process (Kusumastuti & Nugroho, 2020; Wulandari, 2018). Traditional games can not only make students better individuals, but also motivate them more to learn (Burhan & Hidayat, 2023). Motivated students will work hard, be more meticulous, and show greater interest in learning (Taufiq et al., 2021). In fact, this approach is considered to be able to create an inclusive and participatory learning environment (Surya & Prasetyo, 2021). However, most previous research has only emphasized the cognitive or motor aspects of students or social (Juyinah & Mudzakir, 2022), and not much has focused on transforming traditional games as innovative methods to increase learning motivation in the context of basic education.

This research has novelty in two aspects: the use of traditional games transformed according to PJOK learning competencies to create an innovative learning model, and the quantitative testing of its effects on the learning motivation of elementary school students. This research also adopts the learning motivation instrument from (Nur et al., 2021) which has been empirically validated.

The main objective of this study was to determine whether students' intrinsic drive to learn could be enhanced through modification of an existing game. We think that the results of this study can assist in developing new physical education learning strategies that are more engaging, relevant and inspiring.

MATERIAL AND METHODS

The study design is based on theories and phases that examine the link between independent and dependent variables. It employs a quantitative approach and follows a pre-experimental model of the one group pretest-posttest type. In order to boost student desire to learn, this quantitative study used traditional game learning media such as Gobak sodor,

Boy-boyan, Benteng-bentengan, and Lari balok to discover ways to transform these games into an innovative method. Traditional game-based learning that is tailored to each student's needs and goals is an integral part of the program.

Table 1 Design and Research Design

Pre-Test	Treatment	Post-Test
X1	Y	X2

Information: X1 = Pre-test (Before being treated) X2 = Post-test (After treatment) Y = Treatment

During the 2024–2025 academic year, students in fifth grade at SD Nurul ulum—specifically, at Jln Gadukan Baru Gg Sekolahan 1A in Krembangan Village, Krembangan District, Surabaya City—participated in the study. There were no lumpok controls in this research; the group consisted of 40 pupils from class V. This research makes use of both pre- and post-test instruments. Five times, the therapy was administered. The researchers in this study used a motivating questionnaire. Based on the 29-item statement instrument developed by Nur et al. (2021), this learning motivation measure was modified accordingly. Tests for the instrument's validity and reliability yielded a reliability score of 0.90, placing it in the very excellent category (acceptance standards for validity were > 0.70 and for reliability > 0.50).

We ran an early normalcy test before we even thought about testing our theory. To find out whether the data group's or variable's distribution is normal, the normalcy test is run. The computation was derived from data processed using the IBM SPSS Statistics tool, as well as from written test data and surveys. In addition, the following is the hypothesis that this study will test: For data analysis, the following tests were used: one-sample t-test to quantify the difference in learning motivation ratings between the pretest and posttest; and the Kolmogorov-Smirnov and Shapiro-Wilk normality tests. Software developed by SPSS was used for all analyses.

RESULTS

A total of forty fifth graders participated in the study. Questionnaires, observations, and documentation make up the data gathering method. At the same time, a quantitative approach using a one-group pretest-posttest design is used in this investigation. The participants in this research are fifth graders. Finding out what drives kids to study is the goal of this questionnaire-

style tool. The paired sample t-test and the normality test are the tests that are used to ascertain the analytical procedure.

Table 1. A test of motivation to learn. *One sample Kolmogrov-Smirnov Test.*

	Tests of Normality					
	Kolmogorov-Smirnov ^a			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
Pretest motivasi	.181	40	.002	.877	40	.000
Posttest motivasi	.098	40	.200*	.950	40	.078

*. This is a lower bound of the true significance.

a. Lilliefors Significance Correction

Kolmogorov-Smirnov Sig. = 0.002; Shapiro-Wilk Sig. = 0.000 for the pretest score and 0.078 for the posttest score, respectively, indicate that the scores do not follow a normal distribution.

Table 2. Uji Paired Sample T-Test Pretest-Posttest student learning motivation

	One-Sample Statistics					
	N	Mean	Std.	Std. Error	T	Sig. (2-tailed)
			Deviation	Mean		
Pretest motivasi	40	70.18	3.672	.581	120.877	.000
Posttest motivasi	40	89.33	2.956	.467	191.118	.000

Following therapy, the mean motivation score jumped from 70.18 (SD = 3.672) to 89.33 (SD = 2.956). With a pretest t-value of 120.877 and a posttest of 191.118, the t-test results demonstrated a significance level of 0.000 ($p < 0.05$). A considerable improvement in pupils' desire to study is seen from this.

The intervention's efficacy in raising students' intrinsic drive to learn was evaluated using a paired sample t-test. You can see the results in Table 2. An examination of the data showed that the average pre-intervention learning motivation score was 70.18, with a 3.672 standard deviation and 0.581 standard error. The average score shot up to 89.33 after the intervention, with a 2.956 standard deviation and 0.467 standard error. Both findings demonstrated statistical significance at the 0.000 level ($p < 0.001$), with the calculated t-values for the pretest being 120.877 and for the posttest being 191.118.

Based on the results, it is clear that the intervention significantly improved students' learning motivation, since there was a highly significant difference between their motivation levels before and after the session. Students' intrinsic and extrinsic motivating traits substantially improved, as shown by the large rise in the mean score (from 70.18 to 89.33).

Additionally, there is strong statistical evidence to reject the null hypothesis (H_0), which states that there is no change in motivation levels before and after the therapy, due to the very high t-values and the highly significant p-values. As a result, the intervention technique that was implemented had a positive impact on students' desire to study.

DISCUSSION

The results of this study show that the application of traditional game transformation significantly increases the learning motivation of elementary school students. Students' motivation to learn in PJOK learning before being given treatment was still low with an average score of 70.18 in the initial test, while after being given treatment, the average score of the final test was 89.33. The results of his research show that traditional games affect students' learning motivation. When looking at the PJOK learning process, initially students were less motivated and lacked understanding in PJOK learning. With the provision of effective traditional games such as gobak sodor, boy-boyan, benteng-bentengan, and lari balok. Students can concentrate during PJOK learning because students can play while learning, which adds excitement and fun to the learning process (Dese et al., 2023). The improvement is inseparable from the characteristics of traditional games that contain elements of fun, togetherness, and challenges that are relevant to children's worlds. When students are actively involved in fun and meaningful activities, there will be a strengthening of their intrinsic motivation (López-Martínez et al., 2022). This is in line with the theory of Self-Determination which states that involvement that arises from within the individual is more sustainable than extrinsic motivation. In the context of PJOK, game-based learning is able to combine cognitive, affective, and psychomotor aspects simultaneously (Jääskä et al., 2021).

Modified traditional games also serve as contextual mediums that are able to bridge the subject matter with the real lives of students (Yadav & Oyelere, 2021). Thus, learning becomes more meaningful and builds an unforgettable learning experience (Xu et al., 2023). In addition, traditional games have high flexibility in accommodating various learning styles of students, including students who are physically and visually active (Petrigna et al., 2022). The application of this model also has a positive impact on social interaction between students which ultimately forms a sense of togetherness and solidarity (Mace et al., 2017). Indirectly, this creates a healthy learning climate and supports the formation of students' character through sportive and ethical interactions (Muñoz-Arroyave et al., 2021).

The novelty of this research lies in the systematic approach in transforming traditional games into learning media that is integrated in the PJOK curriculum. In contrast to previous studies that only placed games as time-filling activities or distractions, this study directed games to be part of a major learning strategy. Adoption of learning motivation instruments from (Nur et al., 2021) also makes a strong methodological contribution, as this instrument has been validated and shows high reliability in the context of basic education.

Good integration of traditional games, can be a bridge between local culture and modern character education (An et al., 2024), as well as supporting the Merdeka Learning approach that emphasizes learning that is fun and relevant to students' lives. Therefore, this learning model has the potential to be further developed in various levels of education as well as for other competency achievements, such as social and collaborative skills. The practical implication is that teachers can design PJOK learning that is more contextual and meaningful without having to abandon local values and the nation's culture (Colomer et al., 2021)

CONCLUSION

This research proves that the transformation of traditional games which is applied in SD Nurul Ulum class V into innovative learning methods in the context of Physical Education, Sports, and Health (PJOK) can significantly increase the learning motivation of elementary school students. Through a fun, collaborative, and contextual approach, students become more enthusiastic about participating in learning, which is reflected in a significant increase in learning motivation scores after treatment. Traditional games such as Gobak sodor, Boy-boyan, Benteng-bentengan, and Lari Balok not only provide a pleasant physical experience, but are also loaded with educational, social, and cultural values that are relevant to the formation of children's characters. The novelty in this study lies in the use of traditional games that are transformed in accordance with the learning objectives of PJOK and studied quantitatively on students' learning motivation, using empirically validated instruments. This result strengthens the urgency of integrating local culture in elementary school learning, as well as being a concrete step in supporting the Merdeka Learning policy that emphasizes the meaningfulness, diversity, and relevance of learning.

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