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Improving T-Kick Skills Using Bottles in School Education

Aulia Aisyah Wikafera[1], Mochamad Ridwan[2]

[12] Fakultas Ilmu Keolahragaan dan Kesehatan, Universitas Negeri Surabaya, Jalan Kampus Lidah Unesa, Surabaya, 60213, Indonesia

ABSTRACT
This study aims to determine the effect of using a bottle as a prop on students' t-kick skills in pencak silat instruction. This study employed a pre-experimental method using a one-group pretest-posttest experimental design. The study sample consisted of 23 fourth-grade students selected using purposive sampling with an intact group technique. Data collection was conducted through t-kick skill tests administered before (pretest) and after (posttest) the intervention. Data analysis included a normality test using the shapiro-wilk test and a hypothesis test using the paired sample t-test. The results of the paired sample t-test indicated a significant difference between the pretest and posttest results. The students' mean scores increased after the intervention using the bottle medium. The research findings indicate that the use of the bottle medium has a positive effect on improving students' t-kick skills. Thus, the bottle medium can be used as an effective alternative learning medium to support the pencak silat learning process in schools.

Keywords: *Bottle Media, Pencak Silat, T-kick, Learning Media, Physical Education*

Correspondence author: Aulia Aisyah Wikafera, Universitas Negeri Surabaya, Indonesia.
Email: mochamdridwan@unesa.ac.id

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INTRODUCTION

The teaching of pencak silat at various educational levels still faces challenges due to low learning outcomes in basic kicking techniques, resulting from monotonous and unengaging teaching methods (Jasmani *et al.*, 2022). Elementary school students often struggle to understand basic kicking movements because instruction remains theoretical and lacks variety (Rohman, Kristiandaru and Kuswati, 2024). At the secondary level, students show a lack of interest in practicing straight kicks due to the absence of interactive teaching models (Pangesti, Rihatno and Juniarto, 2023). Another obstacle arises from the lack of innovative learning media that can foster student motivation (Fauzan, Rihatno and Novita Sari, 2023). Additionally, teachers' ability to select and apply appropriate learning media remains limited (Fajari and Suhendi, 2017).

Improving kicking skills is essential because they are a key component in assessing martial arts proficiency (Amroin and Indahwati, 2021). In addition to basic movements, pencak silat training plays a role in instilling the values of discipline and sportsmanship in students (Pramoda, Lubis and Sukriadi, 2023). In the context of cultural preservation, pencak silat holds historical significance as a national heritage that must be developed through education (Firman Muzaqi, 2022). The use of innovative media and learning models can enhance the effectiveness of training and attract students' interest in practicing (Suryadin, Sahudi and Kulyana, 2021). Furthermore, improved learning outcomes in basic kicking techniques also support the comprehensive development of children's character and motor skills (Prayoga, Suhdy and Febrianti, 2024).

Previous research has primarily focused on improving pencak silat kicking skills through variations in teaching methods or modifications to exercise routines, but has not yet developed simple tools such as bottles for T-kicks (Avendi, Ismani and Alfindana, 2019). Furthermore, studies examining kicking ability have largely focused on technical analysis and training requirements without utilizing inexpensive and practical physical tools to support learning (Mubarok, 2023). Research directly aimed at improving T-kick ability has indeed been conducted through exercise modifications such as the three-set method; however, it has not utilized training media in the form of target objects, so students have not received optimal visual or kinesthetic feedback (Dewi, Nugroho and Syafei, 2022). Research on bottle media has actually been conducted, but it was limited to improving side kicks, so it has not provided an indication of the effectiveness of bottle media for other types of kicks, such as the T-kick (Fauzan, Rihatno and Novita Sari, 2023). Therefore, there remains a research gap regarding the need to develop simpler, cheaper, and easier-to-implement alternative media, such as bottle media, to improve T-kick skills more effectively in a school setting.

A key finding of this study is the use of bottles as target aids to improve T-kick skills. This is an innovation that has not previously been specifically utilized in pencak silat instruction in schools. The bottles provide a clear target for students, allowing them to directly observe the direction, height, and point of contact of the kick. This enables students to receive immediate feedback on the quality of their kicks. These targets are designed to be used in various academic settings, such as schools with limited facilities. Consequently, they offer a more affordable and user-friendly option for educators and students. Additionally, this study examines how effective the use of simple objects is as a tool for training kicking techniques.

Previous research has primarily focused on technology-based media or standard pencak silat equipment. Thus, this study offers a new learning method that combines the simplicity of

the equipment with learning efficiency, thereby providing added value to improve T-kick skills. This study aims to determine the effect of using bottles as learning aids on improving T-kick skills among students. Through this study, it is hoped that evidence will be obtained to support the application of bottles as an effective and economical learning innovation. Ultimately, this study is expected to contribute to the development of more practical pencak silat learning strategies, particularly in improving T-kick skills in schools.

METHOD

This study employed a pre-experimental method with a one-group pretest–posttest design, in which all students in a single class received the same treatment: the use of bottles as teaching aids for the T-kick. A quantitative research approach was used, as the research data consisted of numerical scores from the T-kick skill test, which were analyzed statistically. The population in this study consists of fourth-grade students, with a total of 95 students. The study sample consisted of 23 fourth-grade students selected using purposive sampling with an intact group technique, meaning a single existing class was selected as the research subject based on the alignment of its characteristics with the study's objectives. The data analysis techniques used included descriptive analysis to determine the minimum and maximum average increases in student scores, as well as inferential analysis using a parametric paired-sample t-test to determine whether there was a significant difference between pretest and posttest results after the bottle-based teaching aid was implemented.

The research was conducted in four meetings, with each meeting lasting 60 minutes. The first meeting was used to administer the pretest to determine students' initial T-kick skills. The second and third meetings were used to provide treatment using bottle media as target objects in T-kick practice. During the treatment sessions, plastic bottles filled with small stones were placed on chairs and used as kicking targets. Students were instructed to perform T-kicks toward the bottle targets repeatedly while maintaining proper kicking techniques. The bottles served as visual targets that helped students focus on the direction and accuracy of their kicks. Throughout the activity, the teacher provided demonstrations, guidance, and corrective feedback. The fourth meeting was used to administer the posttest to determine changes in students' T-kick skills after the treatment.

The research instrument used was an observation sheet for T-kick skills in pencak silat, adapted from the T-kick technique assessment instrument developed by Gayuh Lantipsari (2011). This instrument was used to measure students' ability to perform the T-kick movement

based on the correct technical steps. The assessed aspects included the starting stance, stance, knee lift, kicking force, and final stance, which are the main components in performing the T-kick in pencak silat.

Each assessment aspect was scored on a scale of 1 to 5 according to the quality of the movement demonstrated by the students. The highest score indicates that the student is able to perform the movement perfectly according to the T-kick technical indicators, while the lowest score indicates that the movement has not been performed according to the established criteria. The total score obtained by the student is the accumulation of all assessment aspects, which is then used as the basis for measuring T-kick skills. Thus, the instrument used is in line with the research objective, namely to measure the improvement in T-kick skills after the application of the bottle medium in learning.

The bottle props used in this study served as targets that provided visual stimuli to the students during the learning process. The clarity of the target helps students control the direction of their kicks so that their movements become more precise and directed (Noviani and Fajri, 2022). The use of audiovisual media in pencak silat instruction has been shown to improve students' learning outcomes for basic movements because it provides clearer and easier-to-understand examples of movements (Divayana, Suwiwa and Mashuri, 2024). Animation-based learning media can also help students understand variations in kicking movements more systematically through engaging and interactive visual displays (Suprihatiningrum, Palmer and Aldous, 2022). Furthermore, the use of interactive multimedia in pencak silat instruction can increase student engagement during the learning process because the material can be studied in a more engaging and easily understandable way (Sceisarriya, Rofiq and Hariyadi, 2022). Therefore, bottle-based media can serve as a simple learning tool that helps students achieve learning objectives optimally.

RESULTS AND DISCUSSION

Result

Table. 1. Results of the Shapiro-Wilk Normality Test

No	Name	Statistic	df	Sig.
1	Pretest	.919	23	.062
2	Posttest	.940	23	.179

Based on Table 1, the results of the normality test using the Shapiro-Wilk test show that the pretest data has a significance value of 0.062 and the posttest data has a significance value of 0.179. Both significance values are greater than 0.05; therefore, the pretest and posttest data can be considered normally distributed. Thus, the research data have met the normality assumption and can proceed to hypothesis testing using the parametric Paired Sample T-Test.

Table. 2. Results of the Paired-Sample T-Test

No	Name	t	Sig
1	Pretest-posttest	-24.717	<,001

Based on Table 2, the results of the paired-sample t-test show a t-value of -24.717 with a significance level of < 0.001. Since this significance level is less than 0.05, it indicates a significant difference between the pretest and posttest results for students' kicking skills.

Table. 3. Results of the Test on the Effect of Using Bottles as Training Aids on T-Kick Skills

No	Name	Mean	N
1	Pretest	9.83	23
2	Posttest	21.22	23

These results are supported by the average pretest score of 9.83, which increased to 21.22 on the posttest. Thus, the use of the bottle as a teaching aid was shown to have a significant effect on improving students' T-kick skills.

Discussion

The results of the study indicate that the use of bottles as teaching aids in instruction contributes positively to improving students' kicking skills. The presence of bottles as practice targets helps students improve their accuracy and control of movement when performing kicks. Furthermore, the use of simple and easily accessible teaching aids can support the creation of more effective and engaging instruction, thereby increasing student engagement in the pencak silat learning process.

The findings of this study are consistent with various studies indicating that the use of instructional media in pencak silat can enhance the effectiveness of the learning process and students' motor skills (Gunawan, Suwiwa and Mashuri, 2024). Learning media that provide

hands-on learning experiences can help students better understand movement techniques and make it easier for teachers to deliver instructional content. Therefore, the bottle can serve as an effective, economical, and easily implementable alternative learning medium to improve T-kick skills in pencak silat instruction at school.

The use of appropriate instructional media can help students understand movement techniques more effectively through engaging and interactive presentation of material (Angga, Hariyanto and Tomi, 2020). Instructional media based on modified media have been shown to improve the quality of the pencak silat learning process through a more systematic delivery of material (Sinulingga *et al.*, 2024). The development of learning media for basic pencak silat techniques plays a crucial role in helping students understand movements more systematically, thereby enhancing skill mastery throughout the learning process (Artawijaya and Adi, 2023). Therefore, the use of bottle-based media can serve as an effective alternative learning tool to improve students' T-kick skills.

The improvement in students' T-kick skills can also be influenced by the opportunity to practice repeatedly using a bottle as a target. The presence of a clear target allows students to perform the movement consistently, thereby enabling better development of coordination, balance, and kicking accuracy (Modinger, Woll and Wagner, 2022). During the learning process, students can more easily evaluate the results of their kicks because the target used provides immediate feedback on the accuracy of their movements. Research shows that feedback, particularly visual and corrective feedback, can enhance the learning of motor skills in physical education (Han, Ali and Ji, 2022). These conditions help students form correct movement habits and gradually improve their mastery of the T-kick technique.

The use of plastic bottles as teaching aids can serve as an alternative solution in physical education because they are readily available, inexpensive, and easy to implement in schools (Muktiani *et al.*, 2022). The use of simple teaching aids allows teachers to continue delivering innovative instruction despite limited facilities and resources (Nelson, 2024). The use of learning media that aligns with students' characteristics can enhance their engagement in the learning process (Prastowo, Sardjijo and Ismanto, 2025). Furthermore, the development of various forms of pencak silat learning media demonstrates that instructional innovation plays a crucial role in improving student learning outcomes (Dwiatmini, Listiani and Rustiyanti, 2023). Therefore, the bottle medium is recommended as one alternative for teaching the T-kick in Physical Education (PE) activities at school.

CONCLUSION

Based on the research findings, it can be concluded that the use of bottles as teaching aids contributes to improving students' kicking skills. Bottles serve as practice targets and help students control the direction and accuracy of their kicks, making the learning process more effective. Furthermore, the use of bottle media can increase student engagement in the classroom by providing an engaging learning experience. Therefore, bottle media can be utilized as an efficient, cost-effective, and user-friendly teaching method to enhance T-kick skills in school pencak silat education.

Future research is expected to involve a larger number of participants and employ a study design with a control group so that the impact of using the bottle as a teaching aid can be compared more objectively with other learning media. Furthermore, subsequent research could also explore the use of simple teaching aids in various basic pencak silat techniques to gain a broader understanding of the effectiveness of learning media in improving students' motor skills.

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