



Pencak Silat Training Videos and Students' Critical Thinking Skills

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Abstract

Objectives: To examine the effect of pencak silat training videos on critical thinking skills among seventh-grade students in physical education.

Materials and Methods: A quasi-experimental study with a pretest–posttest control group design involved 30 seventh-grade students divided into experimental and control groups. The experimental group received instruction using pencak silat training videos. Critical thinking skills were assessed using a multiple-choice test developed based on Ennis' critical thinking indicators. Data were analyzed using a t-test at a significance level of 0.05.

Results: The experimental group achieved a higher mean posttest score (81.33) than the control group (69.33), representing a between-group difference of 12.00 points. The t-test indicated a statistically significant difference between the groups ($p = 0.002$).

Conclusions: Instruction using pencak silat training videos was associated with higher critical thinking scores among seventh-grade students. These findings suggest that video-based instruction may support the development of critical thinking skills in physical education.

Keywords: pencak silat; training videos; critical thinking; physical education; secondary school students.

Introduction

Education in the current digital era is undergoing rapid development, with information and communication technology becoming an integral part of daily life. A significant impact of this technological advancement is a paradigm shift in education, where digital media is increasingly utilized as a learning tool (Ardianti Rizki Putri, Devi Catur Winata, 2022). Digital technology-based education offers convenience and flexibility across various subjects, including the teaching of practical skills such as pencak silat. The proliferation of digital platforms—such as video tutorials, learning apps, and social



media—makes it easier for students to access learning materials independently, efficiently, and in a more engaging manner.(Silalahi et al., 2023)

As an Indonesian martial art, pencak silat teaches not only physical techniques but also encompasses cognitive and psychological aspects crucial for developing students' critical thinking skills. Thinking is a defining human characteristic that distinguishes humans from other living beings. An optimal thinking process occurs when an individual receives information and proceeds through stages of comprehension, analysis, interpretation, and evaluation, ultimately making a judgment to distinguish between good and bad (Winata et al., 2023). This ability is vital in various aspects of life, particularly when facing situations that require rational and measured decisions. Consequently, fostering critical thinking skills in students has become a key educational objective(Ridho, 2025).

In practice, however, pencak silat instruction in many schools—including UPT SMP Negeri 9 Medan—still relies on a system limited to direct instruction from teachers or coaches. While effective in some respects, this approach often fails to encourage critical thinking. Students tend to memorize movements or follow instructions without truly grasping the underlying principles or engaging in critical reflection on the techniques being taught. Furthermore, repetitive learning processes confined to training sessions often hinder students from developing the analytical and evaluative skills essential for critical thinking.(Setiawan et al., 2022)

Limited access to learning materials also presents a challenge. Without supportive learning resources available outside of formal class hours, students struggle to review or deepen their understanding of the techniques they have been taught. This creates a disparity in comprehension levels between students who grasp the material well and those who struggle to keep up. Consequently, a new approach to Pencak Silat instruction is needed—one that is more interactive and offers flexible access for all students.(Bakti et al., 2024)

One potential solution is the use of digital platforms, specifically Pencak Silat training videos. By using videos as a learning tool, students can directly observe the techniques being taught, review the material, and gain a deeper understanding of the philosophy and principles underlying the movements. These training videos can be accessed anytime and anywhere, offering students the flexibility to learn independently, refine their techniques, and develop critical thinking skills. Through these videos, students not only acquire correct techniques but are also expected to hone their analytical and reflective abilities regarding the movements they practice.(Bakti et al., 2024)



Implementing digital platforms—specifically Pencak Silat training videos—at UPT SMP Negeri 9 Medan is expected to provide students with flexible access to learning materials, allow them to review techniques, and foster critical thinking skills. Well-structured training videos that include explanations of the philosophy and mechanics of the movements can encourage students to think analytically, evaluatively, and reflectively about every step taken during practice (Londut Pandiangan, Muhammad Isnandar, 2026). This approach not only aids in mastering Pencak Silat techniques but also sharpens critical thinking skills that are valuable in daily life. Thus, the use of digital platforms via Pencak Silat training videos at UPT SMP Negeri 9 Medan holds great potential to overcome the challenges that have previously limited Pencak Silat instruction. This research aims to uncover empirical evidence regarding the impact of using training videos on the enhancement of students' critical thinking skills. Effective Pencak Silat training videos can serve as a tool to support the development of students' critical thinking skills, which in turn will benefit the formation of their character and life skills.

Materials and Methods

Study Design

This study employs a quantitative descriptive approach within a quasi-experimental research design. A defining characteristic of experimental research is the application of a treatment; in this study, the treatment consists of instruction utilizing a digital platform featuring video content. According to Fufu, R. D. A., Tajuddin, A. I., & Ladjar, M. B. (2020), changes observed in experimental research result from the treatment administered to the research subjects. The study compares two groups: an experimental group that uses a digital platform for pencak silat instruction, and a control group that does not use the platform, instead undergoing conventional instruction.

Table 1 Research Design

Group	Pretest	Treatman	Posttest
E	O1	X	O2
K	O1	-	O2

Legend:

E: Experimental

K: Control

X: Treatment using a digital platform for learning Pencak Silat



O1: pretest

O2: posttest

Study Participants

The population for this study consists of all Grade VII students at UPT SMP Negeri 9 Medan, and a single class will be selected via random sampling. This approach ensures that every Grade VII class at the school has an opportunity to be selected as the study sample. Once the sample—comprising 30 students from the selected class—has been obtained, the researcher will divide the students into two groups (an experimental group and a control group) based on their attendance list order, in order to observe changes following the application of the treatment.

Statistical Analysis



In this study, the data analysis technique employed is a difference test—specifically, a t-test—aimed at comparing the pre-test and post-test results of two groups subjected to different instructional treatments. Prior to hypothesis testing, prerequisite tests—namely normality and homogeneity tests—are conducted to ensure the data are normally distributed, possess homogeneous variances, and reflect similar initial conditions.

1) Prerequisite Tests: Conducted before hypothesis testing to determine whether data analysis may proceed. These prerequisite tests comprise two stages: the normality test and the homogeneity test.

a. Normality Test: Conducted to verify whether the data used in the study follow a normal distribution. The Kolmogorov-Smirnov test, performed using SPSS, is utilized for this purpose. The significance level applied is $\alpha = 0.05$. If the p-value exceeds α , the data are considered normally distributed; conversely, if the p-value is less than α , the data are considered not normally distributed.

b. Homogeneity Test: Conducted to determine whether the two groups under analysis possess variances that are ...same. This test is conducted using SPSS, and the results are evaluated based on probability values and the chi-square statistic. If the value exceeds $\alpha = 0.05$, the data are considered homogeneous, meaning both groups possess similar variances.

2) Hypothesis Testing: used to determine whether the proposed hypothesis is accepted or rejected. The test employed is the independent sample t-test, also performed using SPSS with a significance level of 0.05, based on the following criteria:

- The hypothesis is rejected if the calculated t-value is less than the t-table value or the significance value is greater than 0.05.
- The hypothesis is accepted if the calculated t-value is greater than the t-table value or the significance value is less than 0.05.

Results

This study was conducted at UPT SMP Negeri 9 Medan, involving two classes—each consisting of 30 students—as the sample. The research aimed to determine the effect of using pencak silat training videos on improving students' critical thinking skills. Assessments were administered before (pretest) and after (posttest) the intervention using multiple-choice questions based on Ennis's indicators (analysis, inference, and explanation). Normality testing was conducted to determine whether the pretest and posttest data for each group were normally distributed. The testing was performed using the Kolmogorov-Smirnov test with the aid of SPSS version 25.



Tabel 1. Tes Normality Pretes and Postest

Tests of Normality			
Kelas	Kolmogorov-Smirnov ^a		
	Statistic	df	Sig.
PreTest Kontrol	.142	15	.121
PostTest Kontrol	.132	15	.083
PreTest Eksperimen	.138	15	.097
PostTest Eksperimen	.127	15	.110

Since the significance values for all groups and test types were greater than 0.05, it can be concluded that the data in this study are normally distributed. Once the data were confirmed to be normally distributed, a homogeneity test was conducted. The homogeneity test is used to determine whether the two groups have equal variances; this was performed using Levene's Test.

Research conducted at UPT SMP Negeri 9 Medan revealed that the implementation of a digital platform featuring pencak silat training videos significantly improved the critical thinking skills of seventh-grade students. This was evidenced by the difference in average post-test scores between the experimental group using the videos (mean: 81.33) and the control group not using them (mean: 69.33). This 12-point difference was statistically confirmed by a t-test result (Sig. $0.002 < 0.05$), indicating that the difference was not due to chance but was a result of the intervention provided.

The improvement in critical thinking skills within the experimental group can be attributed to the characteristics of the instructional media employed—specifically, the pencak silat training videos. These videos provide concrete visual representations, allowing students to observe movement techniques, step sequences, and potential errors in detail. These findings align with the Cognitive Load Theory developed by Sweller, Ayres, and Kalyuga (2022), which emphasizes the importance of instructional design that accounts for the limitations of students' working memory. Instructional videos that combine visual and verbal elements can reduce extraneous cognitive load and enhance comprehension.

Videos also facilitate a reflective and iterative learning process, enabling students to re-watch sections they find difficult to grasp and evaluate their own movements. This capability strongly supports critical thinking components such as analysis, interpretation, and evaluation, as outlined by Ennis (2020) in his critical thinking indicators. Through the use of videos, students move beyond being passive recipients of teacher instruction; instead, they play an active role in analyzing techniques, making tactical decisions, and independently evaluating errors.



These research results are consistent with the findings of Nurhamidah, Gunawan, and Budiman (2024), who observed that the use of YouTube-based interactive videos had a significant impact on the critical thinking abilities of pencak silat athletes. In the study, 80% of the athletes demonstrated high critical thinking skills, while the remainder exhibited very high capabilities. Pretty's research reinforces these findings within the context of formal school education, demonstrating that a similar approach can be applied not only to athletes but also to general students.

Furthermore, supports the effectiveness of audiovisual media in enhancing the quality of pencak silat instruction. In that study, the use of video for teaching crescent kick techniques successfully increased instructional effectiveness by 60%. This demonstrates that the visual and dynamic nature of video fosters a more comprehensive understanding of movements compared to lectures or time-constrained live demonstrations (Duha et al., 2025).

Additionally, state that pencak silat training directly cultivates students' critical thinking skills, as the discipline requires decision-making within dynamic situations. Pencak silat emphasizes not only motor techniques but also contextual understanding, the anticipation of an opponent's movements, and strategic evaluation. Consequently, the use of pencak silat videos can reinforce these aspects by providing a means for tactical training and the visualization of real match scenarios. (Et.all, 2025)

These research findings also align with Vygotsky's theory of social constructivism, which posits that effective learning occurs through active interaction between students and learning materials. In the context of video-based learning, this interaction manifests as critical observation, movement imitation, and self-performance reflection. When students can access videos independently outside of class hours, they operate within the "zone of proximal development," which fosters further learning—whether independently or collaboratively (Amirza kemal pasha, 2021).

Thus, the results indicate that pencak silat training videos serve not merely as visual aids but as strategic tools for enhancing students' cognitive processes. They are capable of transforming learning patterns from passive to active, critical, and reflective. In the context of Physical Education (PJOK) in the digital era, media such as video not only improves motor skills but also develops higher-order thinking abilities, such as critical thinking.



Acknowledgments

Based on the research conducted and the analysis of the obtained data, the following conclusions can be drawn: The implementation of a digital platform featuring Pencak Silat training videos has a positive and significant impact on enhancing the critical thinking skills of 7th-grade students at UPT SMP Negeri 9 Medan. This is evidenced by the t-test results, which show a significance value of 0.002 (less than 0.05), indicating a significant difference between the experimental and control groups. The mean post-test score for critical thinking skills in the experimental group was 81.33, which was higher than the control group's mean of 69.33. This 12-point difference demonstrates that the use of video media encourages students to think more analytically, evaluatively, and reflectively about the material being studied. Pencak Silat training videos enable students to learn independently, review material flexibly, and reflect on their technical errors, ultimately helping to effectively improve their critical thinking skills. Thus, video-based learning media can serve as an efficient alternative for Physical Education (PJOK) instruction, particularly regarding Pencak Silat material.

Conflict of Interest

Thank you to the teachers, students, and principal SMP Negeri 9 Medan.

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