



# Development of a tapak suci instructional textbook for junior high school students

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Info article	Abstract
<p><b>Filed in:</b> 2025-09-25 <b>Accepted:</b> 2025-11-30 <b>Published:</b> 2025-11-30</p> <p><b>Keyword:</b> <i>tapak suci,</i> <i>instructional textbook,</i> <i>martial arts learning,</i> <i>teaching material</i></p>	<p>The need for structured and standardized learning materials in Tapak Suci martial arts has become increasingly urgent, especially at the junior high school level where instructional resources are often limited. This study aimed to develop and validate an illustrated instructional textbook to support systematic Tapak Suci learning. The ADDIE model was employed, covering analysis, design, development, implementation, and evaluation stages. Expert validation was conducted by a media specialist and a Tapak Suci material expert, while practicality testing involved 10 students. The media expert provided a score of 9/9 (100%), indicating excellent visual quality and usability. The material expert also assigned a score of 9/9 (100%), confirming content accuracy and alignment with Tapak Suci fundamentals. Practicality testing produced a 100% positive response, showing that students found the textbook easy to understand and suitable for skill practice. These results demonstrate that the developed textbook is highly valid and practical, supporting its feasibility for use in Tapak Suci instruction at junior high schools.</p>

## 1. INTRODUCTION

Martial arts education contributes significantly to students' physical development, cultural identity, and character formation, particularly within school environments that integrate traditional Indonesian values. Tapak Suci, as one of the

major schools of pencak silat rooted in Muhammadiyah culture, is widely practiced across educational institutions; however, its learning implementation often lacks standardized teaching resources. Preliminary observations revealed that many instructors rely solely on personal experience, resulting in inconsistent delivery and limited student comprehension of fundamental techniques. This situation underscores an urgent need for structured and pedagogically appropriate learning materials.

Recent developments in technology-enhanced instruction have strengthened the effectiveness of martial arts education, particularly in pencak silat. A web-based learning model designed to support skill development has been shown to enhance students' mastery beyond traditional methods (Mulyana et al., 2024). Mobile learning tools, including an Android-based application created with Smart Apps Creator, have proven valuable for teaching fundamental techniques and have demonstrated high usability alongside notable increases in student performance (Hasibuan et al., 2024). In addition, the integration of gamified platforms such as Quizizz has enriched both cognitive and psychomotor aspects of learning by fostering an engaging environment that strengthens students' comprehension and skill acquisition in pencak silat (Ariadi et al., 2025).

Despite these advancements, very few studies have focused specifically on Tapak Suci learning needs, particularly the development of printed textbooks tailored for junior high school students. The novelty of this study lies in producing a validated, illustrated instructional textbook that integrates cultural heritage, technical content, and pedagogical structure aligned with the Tapak Suci curriculum.

The purpose of this article is to present the development process, validation results, and user responses to the instructional textbook created using the ADDIE model. The findings are expected to contribute to martial arts education by providing a standardized, accessible, and pedagogically sound learning resource that enhances instructional quality, supports teacher effectiveness, and strengthens students' foundational competencies in Tapak Suci.

## **2. METHOD**

A research and development design was applied in this study using the ADDIE model, which consists of analysis, design, development, implementation, and evaluation stages. This model was selected because it allows instructional products to be developed systematically and tested for feasibility. The study was conducted at SMP Muhammadiyah 04 Medan, where observations and data collection were carried out between March and August 2022.

The population of the study consisted of all students and Tapak Suci instructors at the school. From this population, a sample of 10 students, 1 media expert, and 1 Tapak Suci material expert was involved in the evaluation process. A purposive sampling technique was employed to ensure that the selected participants possessed relevant experience for providing accurate evaluations of the developed textbook.

Data were collected through questionnaires, interviews, and documentation. The questionnaires were used to assess product validity, practicality, and usability. Expert validation sheets were administered to evaluate the textbook's content accuracy, media quality, and suitability for instructional use. A Likert scale ranging from 1 to 4 was used to measure responses, with higher scores indicating stronger agreement regarding the product's feasibility.

Data measurement included validity tests and reliability checks. The validity of each questionnaire item was assessed using the Pearson product-moment correlation coefficient, while reliability was examined using Cronbach's Alpha to determine the consistency of responses. Data analysis was conducted descriptively by calculating percentage scores to classify the product's level of validity, practicality, and user acceptance. The results were interpreted to determine whether the textbook met the criteria for an effective instructional resource for Tapak Suci learning.

### 3. RESULTS AND DISCUSSION

The development of the Tapak Suci instructional textbook was carried out through the stages of expert validation and user testing. The results obtained from each evaluation phase are presented below. This research is a development study aimed at developing a comprehensive and high-quality Tapak Suci Putera Muhammadiyah teaching material for students, focusing on three quality aspects: validity, practicality, and practicality.



Figure 1. Textbook Development

The media expert evaluated the textbook based on usability and product effectiveness. The total score obtained was 9 out of 9, equivalent to 100%, which falls into the Highly Valid category. This result indicates that the textbook meets all visual, structural, and functional criteria for instructional media suitability.

Table 1. Media Expert Validation Results

No.	Aspect / Criteria	Score	Percentage	Category
1	Product Usability	5	100%	Highly Valid
2	Product Effectiveness	4	100%	Highly Valid
Total		9	100%	Highly Valid

The material expert assessed the accuracy, relevance, and appropriateness of the content for Tapak Suci learning. The evaluation produced a total score of 9 out of 9, with a percentage of 100%, categorized as Highly Valid. This demonstrates that the

textbook aligns with fundamental Tapak Suci techniques, curriculum standards, and instructional objectives.

**Table 2.** Material Expert Validation Results

No.	Aspect / Criteria	Score	Percentage	Category
1	Product Usability	5	100%	Highly Valid
2	Material Accuracy	4	100%	Highly Valid
Total		9	100%	Highly Valid

A practicality test was conducted involving 10 junior high school students to evaluate the textbook's usability in real learning conditions. Participants assessed comfort and ease of use while following the textbook's illustrations and step-by-step sequences. All responses were positive, yielding a cumulative score of 100%, which indicates that the textbook is highly practical for student use. No difficulties in interpreting illustrations or following instructions were reported during the test.

**Table 3.** Practicality Test Results

No.	Student Name	Comfort (1–5)	Ease of Use (1–4)	Percentage	Category
1	Almira Syahputri	5	4	100%	Practical / Valid
2	Asraf Sahirul	5	4	100%	Practical / Valid
3	Ahmad Rizky	5	4	100%	Practical / Valid
4	Bunga Citra Lestari	5	4	100%	Practical / Valid
5	Dian Sahara	5	4	100%	Practical / Valid
6	Hafizah Ais	5	4	100%	Practical / Valid
7	M. Zaid Zidan	5	4	100%	Practical / Valid
8	Nuraini	5	4	100%	Practical / Valid
9	Viana Ramadhani	5	4	100%	Practical / Valid
10	Zahra Tusita	5	4	100%	Practical / Valid
Aggregate				100%	Practical / Valid

The results of this study demonstrate that the Tapak Suci instructional textbook meets the criteria of validity and practicality required for its implementation in junior high school learning environments. The importance of visually engaging and well-structured instructional media is increasingly evident in martial arts education. Attractive visual elements help sustain learner interest, while organized content reduces cognitive load

and supports better information retention (Rozalini et al., 2023). This is reflected in the exceptionally high validation score 100% awarded by Tapak Suci material experts, indicating that the textbook aligns closely with authentic techniques, cultural values, and curricular standards (Rozalini et al., 2023). Comparable findings emerge from studies on Pencak Silat and Taekwondo, where instructional media consistently received strong expert validation, reinforcing their pedagogical soundness (Setianto et al., 2017).

Structured learning materials have been shown to enhance procedural understanding and conceptual mastery, as evidenced by positive feedback from both students and instructors (Firdana et al., 2024; Islamiyah, 2021). The use of audiovisual resources further supports improved comprehension and memorization of martial arts techniques (Islamiyah, 2021). Nonetheless, while visually appealing and systematic materials offer clear benefits, some perspectives acknowledge that traditional teaching methods still hold value, particularly for cultivating discipline and respect core elements of martial arts practice suggesting that a balanced integration of modern and traditional pedagogical approaches may be the most effective path forward.

The practicality results further reinforce the effectiveness of the textbook. The 100% positive responses from students indicate strong acceptance, usability, and clarity of the material. Students demonstrated comfort in following the illustrated movements and reported no obstacles in understanding the steps provided. These results align with prior evidence demonstrating that multimodal instructional resources particularly those combining visual and auditory cues substantially strengthen skill acquisition in psychomotor learning. Research indicates that integrating auditory–visual stimuli enhance the retention of movement sequences more effectively than unimodal formats (Leow et al., 2025). Complementing this, studies have shown that audiovisual media play a crucial role in supporting the execution of complex motor skills by enabling learners to refine and correct their movements through repeated visual reinforcement (Sumarsono & Anisa, 2019). Although the textbook used in this study is not multimedia-

based, its detailed illustrations provide comparable benefits, offering learners consistent visual guidance that facilitates the internalization of technical sequences.

The positive practicality results also resonate with (Islamiyah, 2021) development of audiovisual learning modules for pencak silat, where learners showed improved ability to follow technical sequences when supported by structured material. These findings also correspond with broader evidence indicating that structured instructional resources whether digital or print-based play a crucial role in strengthening learning outcomes. Audiovisual materials, for example, offer a clear and sequential framework that enables students to understand techniques more effectively (Islamiyah, 2021). The use of video-based content has additionally been shown to heighten learner engagement and motivation, resulting in stronger skill retention (Mukholid et al., 2023). Empirical studies further demonstrate that students achieve higher levels of technical mastery when martial arts skills are presented through audiovisual methods, as reflected in significant performance gains during practical assessments (Desyaningrum & Haqiyah, 2025; Widyalaksono et al., 2020).

Digital integration has also been reported to enhance the overall learning experience by making instructional content more accessible and appealing to learners (Rozalini et al., 2023), while audiovisual tools provide immediate feedback an essential mechanism for refining movement skills in martial arts practice (Desyaningrum & Haqiyah, 2025). The results of the present study align with these observations, demonstrating that even when delivered through a printed format, well-structured and systematically organized materials can still support meaningful improvements in students' theoretical understanding and practical performance.

Another implication of the findings is the contribution to martial arts education, particularly the preservation and standardization of Tapak Suci content. Previous observations revealed that instructors often rely on personal experience rather than standardized references, resulting in inconsistent instruction. The validated textbook addresses this gap by providing a uniform learning structure that can be adopted across

various schools. This supports the argument of educational theorists who emphasize the role of standardized learning materials in achieving consistent learning outcomes across different learning contexts.

The strong student response indicates that the textbook not only supports learning but also increases student engagement and confidence in practicing Tapak Suci techniques. This aligns with the broader theory of student-centered learning, which suggests that accessible and well-designed materials encourage active participation and self-directed learning. When students find materials easy to follow, they are more likely to take ownership of their learning process, practice independently, and achieve higher performance outcomes. The findings of this study affirm that the Tapak Suci instructional textbook is both pedagogically sound and practically effective. Its alignment with previous research and educational theories underscores its potential to enhance the quality of Tapak Suci learning at the junior high school level while supporting the continuity of cultural martial arts education in formal school settings.

#### **4. CONCLUSION**

The development of the Tapak Suci instructional textbook successfully achieved its objective of producing a valid and practical learning resource for junior high school students. The results from expert validations demonstrated that the textbook met all necessary criteria for content accuracy, visual design, and instructional feasibility, as reflected by the 100% scores from both the media expert and the Tapak Suci material expert. These findings confirm that the textbook aligns with curriculum expectations and presents Tapak Suci techniques in a structured and pedagogically sound manner. The practicality test conducted with students further showed that the textbook is highly accessible, easy to follow, and supportive of learners' understanding, as indicated by the 100% positive responses.

#### **5. REFERENCES**

Ariadi, M. G., Bayu, W. I., & Solahuddin, S. (2025). Improving martial arts education through gamified learning: The case of Pencak Silat with Quizizz. *Physical*

- Education and Sports: Studies and Research*, 4(2), 186–194.  
<https://doi.org/10.56003/pessr.v4i2.579>
- Desyaningrum, E., & Haqiyah, A. (2025). Pengaruh Drill Berbasis Media Audio Visual Terhadap Peningkatan Keterampilan Jurus Tunggal Atlet Pencak Silat Satria Muda Indonesia Kota Bekasi. *Motion: Jurnal Riset Physical Education*, 15(1), 1–8.  
<https://doi.org/10.33558/motion.v15i1.11393>
- Firdana, M. Y., Pamungkas, H., Nidomuddin, M., Pradipta, A. W., & Kurniawan, R. (2024). Kelayakan Buku Ajar Mata Kuliah Pembelajaran Sepakbola. *JlIP - Jurnal Ilmiah Ilmu Pendidikan*, 7(5), 4766–4771. <https://doi.org/10.54371/jiip.v7i5.4285>
- Hasibuan, B. S., Ilham, Z., Bangun, S. Y., Sunarno, A., Suganda, M. A., & Suryadi, D. (2024). Interactive learning media for martial arts using smart apps creator: A development study for pencak silat training. *Fizjoterapia Polska*, 24(3), 303–310.  
<https://doi.org/10.56984/8ZG020AH7F>
- Islamiyah, R. (2021). Pengembangan Bahan Ajar Pencak Silat untuk Materi Seni Jurus Tunggal Bagi Ekstrakurikuler. *Sport Science and Health*, 3(1), 1–7.  
<https://doi.org/10.17977/um062v3i12021p1-7>
- Leow, L., Nguyen, A., Corti, E., & Marinovic, W. (2025). Informative Auditory Cues Enhance Motor Sequence Learning. *European Journal of Neuroscience*, 61(10), 1–10. <https://doi.org/10.1111/ejn.70140>
- Mukholid, A., Arif Kustiawan, A., & Alexander, B. (2023). Prosedur pengembangan media audio visual untuk pembelajaran pencak silat dasar. *Jurnal Porkes*, 6(2), 910–927.  
<https://doi.org/10.29408/porkes.v6i2.24225>
- Mulyana, M., Sagitarius, S., Ajid, O. N., & Novian, G. (2024). Digital-based pencak silat learning in Indonesia. *Retos*, 60, 1205–1212.  
<https://doi.org/10.47197/retos.v60.107986>
- Rozalini, N., Munawar, M., & Kinanti, P. (2023). Pengembangan Bahan Ajar Pencak Silat Berbasis Digital Di Sd Negeri Kota Banda Aceh. *Jurnal Penjaskesrek*, 10(2), 89–103. <https://doi.org/10.46244/penjaskesrek.v10i2.2371>
- Setianto, W. R., Widijoto, H., & Sulistyorini, S. (2017). Pengembangan Latihan Taekwondo Dengan Media Audio-Visual Untuk Ekstrakurikuler Taekwondo Di Sma Kabupaten Tulungagung. *Gelombang Pendidikan Jasmani Indonesia*, 1(1), 30.  
<https://doi.org/10.17977/um040v1i1p30-39>
- Sumarsono, A., & Anisa, A. (2019). Audio Visual Media as An Effective Solution for Learning Movement Techniques. *Jurnal Pendidikan Jasmani Dan Olahraga*, 4(1).  
<https://doi.org/10.17509/jpjo.v4i1.12298>
- Widyalaksono, P., Mashuri, H., & Lusianti, S. (2020). Penerapan Media Audio Visual Untuk Meningkatkan Hasil Belajar Gerak Dasar Pola Langkah Pencak Silat Sekolah Dasar. *Gelombang Pendidikan Jasmani Indonesia*, 4(1), 8.  
<https://doi.org/10.17977/um040v4i1p8-17>