



Developing Video-Based Training Materials for the Sparking Technique in Gateball

Abdian Pranatal Giawa¹, Liliana Puspa Sari^{2*}, Eka Abdurrahman³

¹Sekolah Tinggi Olahraga dan Kesehatan Bina Guna, Medan, Indonesia

²Sekolah Tinggi Olahraga dan Kesehatan Bina Guna, Medan, Indonesia

³Sekolah Tinggi Olahraga dan Kesehatan Bina Guna, Medan, Indonesia

Corresponding Author: abdianpranatalgiawa@gmail.com

Abstract

Objectives:

This study aims to produce a Gateball training aid based on video tutorials demonstrating the Sparking technique that is suitable for use by members of the STOK Bina Guna Gateball Student Activity Unit.

Materials and Methods:

This study employs the Research and Development (R&D) method using the ADDIE development model, which comprises the stages of Analysis, Design, Development, Implementation, and Evaluation. The research instrument consists of questionnaires administered to subject matter experts, media experts, coaches, and members of the Gateball Student Activity Unit (UKM). The data were analyzed using quantitative descriptive techniques.

Results:

The research results indicate that the validation by the subject matter expert yielded an average score of 2.90 categorized as good, the media expert 2.85 good, and the coach 2.85 good. The trial conducted with 20 members of the STOK Bina Guna Gateball Student Activity Unit (UKM) resulted in an average score of 3.06 good.

Conclusions:

Based on the research findings, the Gateball training aid featuring video tutorials on the Sparking technique has been deemed suitable as a supplementary training resource for members of the STOK Bina Guna Gateball Student Activity Unit (UKM).

Keywords: Training Media; Video Tutorial; Gateball; Sparking Technique; ADDIE Model.

Introduction

The development of information technology has had a significant impact on various sectors of modern life, including education and sports training (Syafuddin, 2023). The emergence of digital media, such as tutorial videos, provides significant opportunities for developing complex motor skills, particularly in sports that require visual understanding and repeated practice. As a training medium, tutorial videos offer the advantage of visual representation through real action, allowing learners to directly observe correct movements and subsequently imitate, repeat, and practice specific techniques independently outside the classroom or training field. In the context of physical education and sports, the use of tutorial videos has been shown to improve learners' understanding of basic technical movements while also increasing learning motivation and engagement compared with verbal explanations alone, as demonstrated in a study on the development of tutorial video media for football dribbling and heading, which showed high feasibility and significant learning outcomes among eighth-grade students (Yasa et al., 2025).

This phenomenon has emerged in line with the increasing need for more complex sports skill training in the digital era. Many modern sports require athletes or learners to understand technical movements with a high level of detail and precision. In sports such as volleyball, football, and pencak silat, the development of tutorial video media has become an effective strategy for supporting the training of basic techniques that were previously difficult to convey through direct instruction or written materials alone. A



study on the development of basic pencak silat technique media demonstrated that tutorial videos developed using the ADDIE model had high validity and were feasible for use in sports training (Artawijaya & Adi, 2023). Similarly, a study on the development of tutorial video media for volleyball passing techniques found that the media was effective in delivering sports training materials and helped students develop a deeper understanding of the techniques (Raditya et al., 2022).

Gateball is a sport that involves relatively complex and strategic technical skills. The sport is played by two teams and involves techniques such as stroke, touch, and sparking, each of which plays an important role in game strategy. Sparking is a technique in which a player strikes their own ball with the purpose of moving the opponent's ball to a position that provides a tactical advantage for the player's own ball. This technique requires good movement coordination as well as careful tactical planning (Gateball Asia, 2024). Although Gateball is relatively simple physically compared with other sports, understanding specific techniques such as sparking requires realistic visual demonstrations and systematic repeated practice. Therefore, training should not be merely descriptive but should also be visual and applicable.

However, in the training activities of the Gateball Student Activity Unit (UKM) at STOK Bina Guna, the phenomenon observed is that although regular training is conducted, there is currently no tutorial video based training medium available to help members independently and systematically understand and master the sparking technique, particularly outside direct training sessions with the coach. This condition was identified through initial observations, which indicated limited availability of visual media to support technical training activities conducted on the field.

To strengthen these findings, an initial observation was conducted to assess the ability of members of the Gateball UKM at STOK Bina Guna to perform the sparking technique. The observation involved 20 UKM members who were asked to perform the sparking technique three times in accordance with the basic procedures of Gateball. During the observation, assessments were conducted using an observation sheet developed based on the fundamental components of the sparking technique, namely setting (the initial position, including foot placement and ball positioning), body movement coordination during the swing, execution (performing the stroke using the correct technique), and the accuracy of the ball's direction and force after the stroke. Each component was assessed based on the accuracy of technical execution. Members were categorized as sufficiently capable if they were able to perform most of the technical indicators correctly, resulting in a sparking stroke that achieved its intended purpose. Meanwhile, members were categorized as not yet capable if they still made errors in most of the technical indicators, resulting in movements and stroke outcomes that did not correspond to the expected technique. The results of the initial observation are presented in Table 1 below.

Table 1. Data from Initial Observations of Sparking Technique Proficiency

No	Sparking Technique Ability Category	Number of Members	Percentage
1	Not yet capable/low	13 person	65%
2	Quite capable	7 person	35%
Amount		20 person	100%

Based on Table 1, 13 members (65%) were still categorized as unable, while 7 members (35%) were categorized as moderately capable of performing the Sparking technique.



These results indicate that most members had not yet mastered the basic components of the Sparking technique optimally, particularly in terms of setting, movement coordination, execution, and controlling the direction and power of the ball. This condition indicates that the training conducted so far has not fully supported members in mastering the Sparking technique correctly and consistently.

These findings indicate a gap between the ideal technical training needs and the implementation of training in the field. Therefore, training media are needed that can provide visual, systematic, and easy-to-understand demonstrations, enabling members to repeatedly study each stage of the movement. The needs analysis also showed that members of the Gateball Student Activity Unit (UKM) at STOK Bina Guna have a high need for video tutorial-based training media that present step-by-step demonstrations of the Sparking technique and can be accessed at any time. Such media are expected to overcome the limitations of training time with the coach while supporting independent practice for members who have limited time to attend all training sessions directly.

Although various studies have confirmed the effectiveness of video tutorial media in sports technical training, the literature review reveals a clear research gap. To date, no study has been identified that specifically develops video tutorial media for Gateball, particularly for the Sparking technique. Previous studies have mainly focused on sports such as soccer, basketball, and pencak silat and have generally addressed basic techniques (Artika et al., 2022; Ulu et al., 2022).

This research gap indicates that the development of video tutorial-based training media for the Sparking technique in Gateball represents a significant research opportunity and is relevant both practically and theoretically. The developed media function not only as a visual aid but also as a systematically designed training product developed using the ADDIE model, validated by experts, and empirically tested to support improvements in understanding and technical skills.

The novelty of this study lies in its specific focus on developing video tutorial-based training media designed specifically for the Sparking technique in Gateball, which, to date, has not been systematically examined in the academic literature. This focus differs from previous studies that generally developed video tutorial media for basic techniques in other popular sports. It also differs from existing electronic Gateball modules that provide multimedia content but do not specifically focus on a Sparking technique video tutorial designed as an independent training medium. Furthermore, this study employs a structured development approach involving expert validation and empirical testing with UKM members as actual users. Thus, the study produces not only theoretical findings but also a practical product that is ready to be implemented and evaluated in the field.

Therefore, the development of video tutorial-based training media for the Sparking technique in Gateball not only addresses practical training needs within the UKM environment but also contributes to the advancement of sports education and learning technology. The product provides an alternative training medium that is relevant to current digital learning preferences while addressing the existing gap in training media for complex sports techniques. In addition, it opens opportunities for further research on the development of technology-based training media that can be adapted to other sports in the future.

Materials and Methods

Study Design

This study employs a Research and Development (R&D) approach. The development model utilized is the ADDIE model (Analysis, Design, Development, Implementation, and Evaluation). This model was selected due to its systematic, structured, and flexible stages for developing technology-based training media.

Study Participants



The research subjects consisted of 20 individuals (12 men and 8 women) members of the STOK Bina Guna Gateball Student Activity Unit (UKM) acting as end users, with the study conducted at the STOK Bina Guna Gateball field.

Study Organization

In this study on the development of a video tutorial based Gateball learning medium focusing on the Sparking technique, a questionnaire was used as the research instrument. The questionnaire served to gather data regarding the medium's feasibility based on expert evaluations and user responses to the developed medium.

Statistical Analysis

This study employs a quantitative descriptive analysis technique. This method is used to process data derived from validator assessments and user responses regarding the developed video-based Gateball training aid focused on the Sparking technique. The data analyzed consists of expert validation results and user feedback. Expert validation data was obtained from assessments provided by subject matter experts, media experts, and Gateball coaches regarding the developed product. Meanwhile, user response data was gathered via questionnaires completed by student members of the STOK Bina Guna Gateball club after they utilized the training aid. The data comprises scores evaluating the material, media, and instructional aspects of the "Sparking" technique video tutorial.

Results

The research results were obtained from the complete assessment process involving a subject matter expert, a media expert, a Gateball coach, and members of the STOK Bina Guna Gateball Student Activity Unit (UKM). The assessment was conducted to determine the quality and feasibility of the developed Gateball sports training medium based on a video tutorial of the Sparking technique. The results of each assessment were compiled to determine the overall quality of the developed product.

Table 2. Research Results Data

No.	Assessor	Average Score	Category
1	Subject Matter Expert	2,90	Good
2	Media Expert	2,85	Good
3	Coach	2,85	Good
4	Student Activity Unit Member	3,06	Good
Overall Average		2,91	Good

Based on Table 2, the subject matter expert obtained an average score of 2.90, categorized as Good. The assessment indicated that the material presented in the video was appropriate to the concepts and basic movements of the Sparking technique. The material was presented systematically and sequentially, including the explanation of the technique, movement stages, correct demonstrations, common errors, and slow-motion demonstrations.

The media expert obtained an average score of 2.85, categorized as Good. The assessment covered the quality of the video presentation, text, audio, visual design, and presentation sequence. The results indicated that the developed video had an appropriate visual presentation and could be accessed using electronic devices such as smartphones and laptops.



The assessment by the Gateball coach also obtained an average score of 2.85, categorized as Good. The coach's assessment indicated that the video tutorial was suitable for supporting Sparking technique training. The video provided clear demonstrations that could be observed repeatedly and could support members in practicing independently outside scheduled training sessions.

The product trial involving 20 members of the STOK Bina Guna Gateball UKM obtained an average score of 3.06, categorized as Good. The members' responses indicated that the video tutorial was easy to understand, attractive, and helpful in explaining the stages of the Sparking technique. The video also provided members with the opportunity to pause, replay, and review specific movements according to their individual needs.

The development process also included product revisions based on suggestions from the validators. The revisions included adding examples of common errors in performing the Sparking technique, clarifying foot positioning and swing direction, and adding demonstrations from a side angle. These revisions were implemented to improve the clarity and completeness of the video tutorial before it was used in the product trial.

Based on the four assessment results, the overall average score was 2.91, which was categorized as Good. The results indicate that the developed Gateball sports training medium based on a video tutorial of the Sparking technique met the assessment criteria in terms of material content, media presentation, suitability for training, and user response.

Overall, the final product was developed in the form of a video tutorial that presents the Sparking technique systematically and can be used as a supporting resource for Gateball training. The product can be accessed through electronic devices, allowing members to review the material and practice the Sparking technique independently outside scheduled training activities.

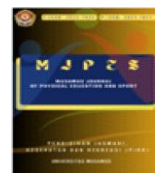
Discussion

This study developed a Gateball sports training medium based on a video tutorial of the Sparking technique for members of the Gateball Student Activity Unit (UKM) at STOK Bina Guna. The development used the ADDIE model, consisting of Analysis, Design, Development, Implementation, and Evaluation. The model was selected because it provides systematic and flexible procedures for developing training media according to users' needs.

The Analysis stage identified that Sparking training was mainly conducted through direct demonstrations by the coach. Although this method provided examples of the movement, limited training time, the number of UKM members, and limited opportunities to review the material made it difficult for some members to understand the Sparking technique, particularly foot positioning, swing direction, and movement execution. Therefore, a video tutorial was developed to provide members with an opportunity to observe and repeat the movements independently. This is consistent with Uno (2011), who explained that media can function as an intermediary for delivering information and stimulating users' attention and interest.

In the Design stage, the content, storyboard, video sequence, and assessment instruments were prepared. The video included the definition and purpose of Sparking, movement stages, correct demonstrations, common errors, and slow-motion demonstrations. The presentation applied multimedia principles, particularly segmenting, signaling, and multimedia principles (Mayer, 2024; Mödinger et al., 2022), to make the movement information easier to understand.

During the Development stage, the video was produced using CapCut and Canva and was subsequently validated by a subject matter expert, media expert, and Gateball coach. The validators suggested several improvements, including adding examples of common



errors, clarifying foot positioning and swing direction, and adding side-angle footage. These revisions improved the clarity and completeness of the training medium. During Implementation, the revised product was tested by UKM members, who could observe, pause, and replay the video according to their individual needs. The Evaluation stage was conducted by considering the validation results and user responses to determine the final quality of the product.

The feasibility of the developed training medium was supported by the assessment results from the subject matter expert, media expert, and coach. The subject matter expert considered the material appropriate to the basic concepts and correct Sparking technique, while the media expert assessed the presentation, text, audio, and visual design positively. The coach also considered the video useful as a supporting resource for training because members could repeatedly observe the correct movements. These findings are consistent with Mayer (2024) and Mödinger et al. (2022), who emphasized the benefits of visual and video-based information in supporting the understanding of motor skills. Adi et al. (2024) also reported that audiovisual media can support understanding of sports techniques by allowing movements to be observed directly and repeatedly.

The user trial also showed positive responses from members of the Gateball UKM. The video was considered easy to understand, attractive, and helpful in understanding the stages of the Sparking technique. The ability to access and repeat the video independently also provided greater flexibility during training. These findings are consistent with Semarayasa et al. (2023), who found that video tutorials can support sports skill learning by allowing users to observe and repeat movements according to their needs. Kok et al. (2020) and Mödinger et al. (2021) also indicated that video feedback can support movement evaluation, self-reflection, and confidence in learning motor skills.

Overall, the results indicate that the developed Gateball training medium is suitable as a supporting resource for Sparking technique training. The medium provides visual demonstrations that can be repeatedly accessed and used independently, complementing direct instruction from the coach. Thus, the video tutorial can serve as an alternative training resource to support members of the Gateball UKM at STOK Bina Guna in understanding and practicing the Sparking technique.

Conclusions

Based on the research findings, a video-tutorial-based Gateball training aid focusing on the Sparking technique was successfully developed using the ADDIE model. Validation results from the subject matter expert, media expert, and coach were all rated as good, with scores of 2.90, 2.85, and 2.85, respectively. A trial conducted with 20 student club members yielded a score of 3.06, also falling into the good category. Consequently, the developed training aid is suitable for use in supporting Sparking technique practice within the STOK Bina Guna Gateball student club.

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Conflict of Interest

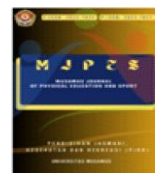
The authors declare no conflict of interest.

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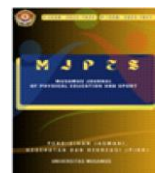
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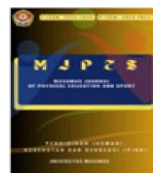
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