



The Effect Of A Digital Mediabased Dribbling Approach On Futsal Extracurricular Activities At Smp Wesley Academic Year 2024/2025

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Abstract.

Background

The background to this research stems from the limited sports facilities in schools and the use of conventional learning methods, which are less able to optimally accommodate motor skill mastery. Digital media approaches such as video tutorials and motion analysis are expected to overcome these obstacles and improve learning effectiveness.

Objectives

This study aims to determine the effect of the futsal dribbling approach through digital media on improving students' dribbling abilities in extracurricular activities at Wesley Middle School.

Methods

This study used a quantitative method with a one-group pre-test and post-test pre-experimental design. The sample consisted of 20 students participating in the futsal extracurricular activity at Wesley Middle School. Data were collected through dribbling ability tests before and after being exposed to digital media-based learning.

Results

The results of the normality test showed that the data were normally distributed. Hypothesis testing using a paired-samples t-test revealed a significant difference between the pre-test and post-test scores with a significance value of $p = 0.000$ ($p < 0.05$). Average dribbling time increased from 32.40 seconds to 29.11 seconds.

Conclusion

Overall, this approach not only improves learning outcomes quantitatively but also has a qualitative impact on students' attitudes and enthusiasm for participating in futsal extracurricular activities. Extracurricular activities managed with an innovative approach can build character, increase students' sense of responsibility, and strengthen teamwork.

Keywords: Digital Media, Dribbling, Futsal

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INTRODUCTION

Education plays a crucial role in preparing a generation capable of facing global challenges. Through education, not only academic skills are honed, but also non-academic skills that support holistic individual development. Physical education, sports, and health (PJOK) is an element in the education system that aims to form healthy lifestyle habits, develop motor skills, and instill social values such as sportsmanship and cooperation (Marín-Suelves et al., 2023; Lee & Gao, 2020). As part of formal education, PJOK has the responsibility to improve students' physical and mental health. International research shows that creative and innovative PJOK teaching can increase student engagement in physical activities, which has an impact on improving their fitness and learning motivation (Marín-Suelves et al., 2023; Lee & Gao, 2020).

Regulations regarding digital or electronic technology-based sports remain oriented toward fitness, health, and social interaction, and are encouraged to support the development of the sports industry. Furthermore, digital and electronic technology-based sports are organized with attention to social and cultural humanitarian values, physical literacy, safety, and norms of propriety and morality. This situation reflects the reality often encountered in various educational institutions, where the ideal implementation of physical education and health education faces various practical obstacles in the field (Republic of Indonesia Law Number 11 of 2022 concerning Sports). One of the main problems lies in the learning approach applied. Teachers still rely heavily on conventional methods, namely lectures and demonstrations. In today's digital era, digital media plays a crucial role in supporting various activities, including sports.

Additionally, extracurricular activities like futsal provide opportunities for students to develop social and leadership skills. Participating in these extracurricular activities not only improves physical abilities but also helps build character and teamwork. As explained by Johnson (2019) in the "Journal of Youth Development," active participation in extracurricular sports can foster a sense of responsibility, discipline, and social engagement among participants. Therefore, the integration of digital media into the training and development of extracurricular activities like futsal offers significant opportunities to enhance athletic performance and a holistic learning experience. This technological application not only enriches training methods but also paves the way for innovation in how we understand and develop sports skills. In futsal, in particular, dribbling is a fundamental skill that requires precision, speed, and ball control (Côtés et al., 2021). Proficient dribbling skills will enhance a player's ability to get past opponents and create scoring opportunities. Research shows that effective dribbling requires a combination of leg strength, body balance, and the ability to read the opponent's play.

Another equally crucial challenge is the limited availability of sports infrastructure. Wesley Middle School faces serious constraints in terms of adequate facilities. The existing field does not meet expected quality standards, while the available sports equipment is also insufficient to support optimal learning. This situation is particularly impactful in futsal learning, where field quality and equipment are key factors in developing basic skills. For example, dribbling techniques in futsal are not optimal due to these limitations. Students lack sufficient space to practice, and less-than-ideal field conditions increase the risk of injury and hinder the development of proper technique. Limited equipment also results in inefficient practice time, as students must take turns using the available equipment.

To address these challenges, digital approaches to physical education (PJOK) can be an innovative solution. Digital technologies, such as sports learning apps, video tutorials, and movement analysis software, have been proven effective in improving students' understanding of sports content. Research by Lee and Gao (2020) shows that integrating digital technology into physical education can increase student motivation and facilitate their understanding of movement concepts. Furthermore, Marín-Suelves et al. (2023) state that digital technology can be an important tool for overcoming facility limitations and improving the quality of learning in various educational contexts. In futsal, the use of digital media to practice skills such as dribbling offers numerous benefits. Video-based approaches allow students to better visualize techniques, while technology-based analysis helps teachers provide specific and targeted feedback. Other studies also confirm that the use of digital devices can improve technical accuracy and efficiency of motor skill learning in students (Kok et al., 2020; Greve et al., 2022).

In the initial phase of the study, a pretest was conducted to measure the basic futsal dribbling skills of Wesley Middle School extracurricular students before receiving a digital media-based learning intervention. This pretest was designed as a zigzag dribbling exercise through seven cones, with three attempts for each student, and a stopwatch was used to record the fastest time. Of the 20 students who took the pretest, the times ranged from 29.5 seconds (fastest) to 35.1 seconds (slowest), with an average of 32.4 seconds and a standard deviation of 1.35 seconds.

Detailed scoring results showed that the majority of students—15 (75%)—experienced difficulties categorized as "Poor" (score 5), while 5 (25%) performed in the "Very Poor" (score 4) category. None of the students achieved the "Sufficient" or higher category, indicating that no students were able to complete the dribbling test within a time that met the minimum standards for physical education (PJOK) for futsal. These data reinforce field findings regarding the low level of basic dribbling motor skills and emphasize the need for a more effective and engaging learning approach.

These conditions have important implications for the Physical Education (PJOK) learning process at Wesley Middle School. First, the relatively high average time (32.4 seconds) indicates that many students have not yet mastered the technique of simultaneous change of direction and ball control, crucial skills in futsal. Second, the distribution of scores, which are predominantly in the lowest category, indicates weak kinesthetic perception and foot-eye coordination, which may not have received sufficient attention in traditional lecture and demonstration methods.

Therefore, these pretest findings provide an empirical basis for designing a digital media-based intervention. Through video tutorials on dribbling movements, slow-motion animations of dribbling techniques, and real-time motion analysis tools, it is hoped that students will be able to observe, imitate, and correct technical errors independently and repeatedly. The integration of digital media not only aims to address facility limitations—such as the small field and limited number of practice balls—but also to increase student motivation and engagement during futsal extracurricular activities. Therefore, this study seeks to demonstrate the extent to which a digital learning approach can improve the efficiency and effectiveness of futsal dribbling skill mastery among Wesley Middle School students.

METHOD

Research Design

This study employed quantitative research with a quasi-experimental method and a one-group pre-test-post-test design. Measurements were taken before implementation and repeated after implementation.

Participant

This research will be conducted at the Wesley Junior High School Futsal Field, a sports facility within the Wesley Junior High School complex. The researcher used the entire population, 20 respondents, for the sample.

Data Analysis

The data obtained in this study was then followed by a t-test. The data analyzed must be normally distributed between the dependent and independent variables to obtain a minimum coefficient between the dependent and independent variables. In this study, the data was analyzed using SPSS (Statistical Package for the Social Sciences) to process quantitative data. The analysis was conducted using prerequisite tests, such as normality tests, and hypothesis testing using paired sample t-tests to determine significant differences between pre-test and post-test scores.

RESULTS AND DISCUSSION

Results

Based on the pre-test and post-test results, it can be concluded that there is a significant difference in the improvement of students' dribbling skills. Statistically, the paired sample t-test showed a significance value of 0.000 ($p < 0.05$), indicating a significant effect of digital media use on students' dribbling skills. This demonstrates that the digital media approach successfully provided effective visual and auditory stimuli.

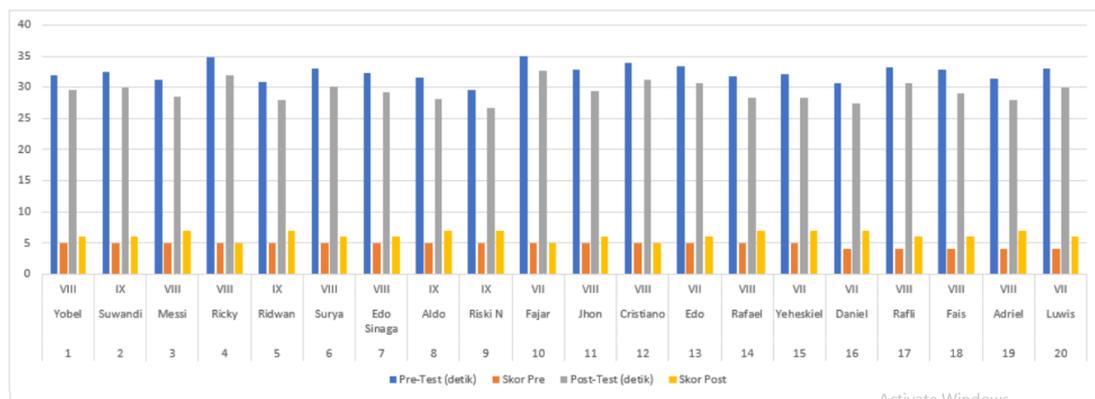


Figure 1. Comparison diagram between pre-test and post-test.

The graph above shows a comparison between students' dribbling ability test results before and after being exposed to digital media learning. This diagram displays two lines or bars of data: one representing the pre-test results, and the other representing each student's post-test results.

Discussion

The results of this study indicate that a learning approach using digital media significantly improved the futsal dribbling skills of extracurricular students at Wesley Middle School. This is evidenced by the increase in students' average dribbling ability score, from 32.40 seconds (pre-test) to 29.11 seconds (post-test), and the statistical test results showed a significance value of 0.000 ($p < 0.05$).

In practice, these findings demonstrate that a digital media-based approach is an effective strategy for overcoming various learning challenges in the field, particularly in schools with limited facilities, such as Wesley Middle School. As is known, Wesley Middle School faces limitations in terms of the quality of sports fields and equipment, so learning motor skills such as dribbling is often suboptimal if only relying on conventional methods such as lectures or limited demonstrations. Through a digital media-based approach,

students are provided with materials in the form of video tutorials, slow-motion animations, and examples of dribbling techniques from various angles. This allows them to learn independently, observe techniques more clearly, and repeat the material as needed. In addition, engaging visualizations from digital media can increase students' learning motivation and activate their direct involvement in the training process.

These findings also align with constructivist learning theory, where students actively construct their knowledge through direct experience and interaction with their learning environment. In this regard, digital media serves as an alternative learning environment, providing visual and auditory stimuli to reinforce understanding of motor concepts such as dribbling. Literature also supports these findings. In their study, Rodríguez-López et al. (2022) demonstrated that the use of digital devices can improve dribbling skills by up to 30% through real-time feedback and more accurate motion analysis. Meanwhile, Stoicescu & Stănescu (2021) found that interaction through social media and sports apps can accelerate technique mastery because they allow for more flexible and student-centered learning.

In terms of motor skill development, the improvements demonstrated that students were able to adapt dribbling movements more effectively after being given repeated visual stimuli from digital media. Students became quicker in making decisions while dribbling, more confident in varying techniques, and were able to maintain better control of the ball while moving through cones. Overall, this approach not only improved learning outcomes quantitatively but also had a qualitative impact on students' attitudes and enthusiasm for participating in futsal extracurricular activities. This aligns with Johnson's (2019) view, which emphasizes that extracurricular activities managed with an innovative approach can shape character, increase students' sense of responsibility, and strengthen teamwork.

Thus, the use of digital media in physical education (PJOK) learning, particularly futsal, is not only a solution to limited facilities, but also an opportunity to encourage a more interactive, engaging, and impactful learning transformation for long-term student skill development.

CONCLUSION

Based on the results of research that has been conducted regarding the effect of the futsal dribbling approach through digital media on the dribbling abilities of extracurricular students at Wesley Middle School in the 2024/2025 Academic Year, the following conclusions can be drawn: 1. The learning approach with digital media has a significant influence on improving students' dribbling abilities. This is evident from the statistically significant difference in pre-test and post-test scores, with a p-value = 0.000 ($p < 0.05$). 2. The average dribbling time of students experienced an increase in performance, from 32.40 seconds in the pre-test to 29.11 seconds in the post-test. This indicates an increase in speed and ball control after being given digital media-based learning treatment. 3. Digital media has proven effective in overcoming the limitations of school physical facilities, such as substandard fields and a lack of learning aids. Through videos, animations, and visualizations of dribbling techniques, students can learn independently and interactively. 4. This approach has also succeeded in increasing student motivation and participation in participating in extracurricular futsal training. Students appear more active, enthusiastic, and confident in performing dribbling techniques.

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AUTHOR CONTRIBUTION STATEMENT

This research was conceptualized and designed by Andreas Matondang, who developed the research objectives and methodology, managed data collection, coordinated with participants, and supervised fieldwork at STOK Bina Guna Medan. Eka Abdurrahman performed data analysis, interpreted the findings, and contributed significantly to the drafting of the manuscript. All authors participated in the revision of the manuscript, approved the final version for submission, and take full responsibility for the integrity and accuracy of the work.

CONFLICT OF INTEREST AND FUNDING

The authors declare no conflict of interest related to the conduct, authorship, or publication of this study.

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