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Development of Digital-Based Teaching Materials (Flipbook) on Basic Block Technique Material in Sepak Takraw

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Abstract

Sepak takraw is a traditional game originating from Southeast Asia, widely sought after in countries such as Thailand, Indonesia, Malaysia, and Myanmar. The aim of this research is to develop digital flipbook-based teaching materials using basic block techniques using qualitative and quantitative research methods. Results of observations through Google Forms and interviews, which showed that 97.6% of respondents agreed that there was effective and flexible learning innovation. All respondents (100%) also confirmed that flipbook-based digital teaching materials had never been applied in teaching basic sepak takraw techniques using the ADDIE (Analysis, Design, Development, Implementation, and Evaluation) development model. Data analysis was conducted descriptively, quantitatively, and qualitatively, with the research subjects being fifth-semester students of the Physical Education, Health, and Recreation Study Program who were selected purposively . The data collection instrument in this study used a questionnaire recording sheet. The results showed that the content/material expert test obtained a very feasible category (100%), the design expert test was feasible (83%), the media expert test was very feasible (98%), and the field practitioner expert test was 98%. The product trial also produced a highly suitable category, with a presentation of 95.4% in individual trials, 96% in small group trials, and 95% in large group trials. Thus, this flipbook-based digital teaching material is considered highly relevant and suitable for use in learning.

How to Cite

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INTRODUCTION

Education is an essential foundation for human life. Through education, individuals gain the opportunity to develop knowledge, skills (Suarningsih Ni Made et al., 2024). In (Lestari & Mabrur Haslan, 2025) stating that based on Law Number 20 of 2003 concerning the National Education System, education is a learning process that aims to develop the potential of students in terms of knowledge, skills, and character in order to improve the quality of human resources. Meanwhile (Darma Ulima Banurea et al., 2023), it states that education is a process that must be carried out consciously, planned, systematic and mature to develop the potential of religious spiritual strength, self control, personality, intelligence, noble morals, and skill.

Physical Education is an education designed through systematically organized physical activities, with the aim of developing various dimensions of individual abilities, including organic, neuromuscular, perceptual, cognitive, social, and emotional aspects (Yulia Sari et al., 2024). In (Indrayogi I, 2021) stating that physical education is education that refers to physical activity or in the original language physical. education is education of and through movement. In (Rabwan Satriawan, 2021) stating that Physical Education is a planned process that utilizes physical activity to improve physical skills, intelligence, and character formation. Physical activity utilizes physical activity, one of which is through sepak takraw games, to improve physical skills, intelligence, and character formation.

Sepak takraw is one of the traditional sports that has long been known and developed in Indonesia. This sport is not only seen as a traditional game, but has been recognized as an official sport that is competed at various levels of competition, both at the national, regional, and international levels (Nugrah Setyiawan & Bin Ilyas, 2024). In (Kusuma Wijaya et al., 2022) stating that sepak takraw is a game using balls made of rattan and limited by a net which is carried out on a rectangular field, with a flat surface, and can be played both in a closed space and in an open area (outdoor). In (Mamu et al., 2022)stating that the game of sepak takraw is played by two teams, each squad consists of three players. In the game of sepak takraw, there are basic techniques that must be mastered by every player starting from passing, serving, smashing and blocking.

The game of sepak takraw requires every player to master basic techniques, because this mastery is an important requirement for the game to run effectively and according to the rules. Basic techniques serve as the main foundation that allows a player to participate and demonstrate playing skills optimally (Zipora Tandea et al., 2025). In (Zipora Tandea et al., 2025) stating that the basic block technique is a defense to dampen attacks from opponents that are carried out effectively and its success can be measured through two main indicators, namely the creation of additional numbers for the team and the movement of ball possession.

Since 1963, the Association for Educational Communications and Technology (AECT) has defined educational technology as a reflection of changing learning paradigms and technological developments. In 1972 and 1977 the definition shifted to a systematic approach in planning and evaluation of planned learning. In stating that technological progress requires education to develop in a balanced manner. Fast and unlimited access to information makes it easier for students to obtain learning materials (Chaeruman et al., 2025). In (Aliyah & Masyithoh, 2024) this context, educators are required to adapt in order to be able to play the role of an effective mentor and facilitator. Technology can be understood as a collection of tools and methods designed to meet the needs and improve the quality of human life. In the context of education, one form of application is the use of (Aliyah & São Paulo, 2024) flipbook teaching materials, which are digital books that educators use as a medium for delivering learning materials.(Ulandari & Hart, 2022).

Based on the results of interviews and initial observation surveys in the form of google forms to students of the social engineering study program who have taken sepak takraw courses where the results of the interviews in the form of responses stated that there were no digital-based teaching materials (flipbooks) and the results of the google form, namely 100%, stated that there were no digital-based teaching materials (flipbooks). The results of the respondents are in the form of a google form that has been filled out by students of the Penjaskesrek study program who have passed the sepak takraw course, with 100% of the need for digital-based teaching materials in the form of flipbooks to support the sepak takraw lecture process, especially basic block techniques.

Digital-based learning media, especially in the form of flipbooks, is seen as one of the innovative solutions to overcome various obstacles in the learning process. Flipbooks not only present material in the form of text, but are also equipped with visual and audio elements that are interesting and interactive, so that they can increase

student engagement.

In the context of learning the theory and practice of sepak takraw, digital teaching materials with the title "Development of Flipbook-Based Teaching Materials on Basic Block Techniques in Sepak Takraw Learning." This research aims to produce digital learning media that can support the lecture process, especially in basic block engineering materials. The resulting products are expected to be able to be a reference for educators in delivering material in a more interactive, interesting, and practical way.

METHODS

This study uses the ADDIE development model, which includes five key stages: analysis, design, development, implementation, and evaluation (Martyrdom et al., 2024).

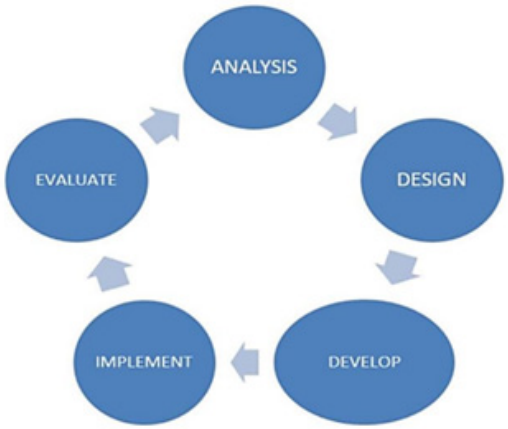


Figure 1. Model ADDIE

This model emphasizes the importance of a systematic and planned learning process. Each stage has specific functions, ranging from analyzing needs, designing approaches and teaching materials, developing products, to conducting evaluations for continuous improvement. In (Indriana et al., 2024) stating that the ADDIE model was chosen because each stage has advantages that support more effective process evaluation and reduce the potential for errors.

This research focuses on the development of flipbook-based digital teaching materials on the basic block technique in Sepak Takraw learning with the research subject of fifth-semester students of the Physical Education, Health, and Recreation Study Program, Faculty of Sports and Health, Ganesha Education University through a descriptive, qualitative, and quantitative approach, which is carried out in three trial stages, namely individual trials with 3 (three) respondents, small group trials with 7 (seven) students, and large group trials involving 21 (twenty-one) students, where each stage uses instruments in the form of questionnaires to obtain data on perceptions, assessments, and inputs which are then analyzed to assess the feasibility and quality of the teaching materials developed, with the aim of assessing the feasibility of the product through the use of questionnaire or questionnaire instruments whose research results are collected in the form of score and converted into a scale of five to determine the eligibility category according to the score conversion guidelines presented in the following **Table 1.**

Table 1. Conversion of achievement levels with a scale of 5

Achievement Rate (%)	Classification	Note
90-100	Highly Worth It	No revision required
80-89	Worthy	Slightly revised
65-79	Quite Decent	Revised to the extent
55-64	Less Worthy	Many things have been revised
1-54	Very Less worthy	Repeated product making

RESULTS AND DISCUSSION

Using the ADDIE model, namely Analysis, Design, Development, Implementation, and Evaluation. The first stage is Analysis. At this stage, a needs analysis was carried out by making observations through google forms and interviews related to sepak takraw learning in students of the Penjaskesrek Study Program, Faculty of Sports and Health, Ganesha University of Education who have taken the Sepak Takraw Learning course, the second stage is design (design)). At this stage, the basic engineering materials to be used in the teaching materials are determined, then the hardware and software that will be used in the process of making digital-based teaching materials (flipbooks) are determined. The hardware used in the planning process of this research, smartphones and laptops, then the software used, namely Microsoft Word, Canva, Google Drive, Google Form, Capcut, YouTube, Flipbuilder, storyboard and flowchart. The third stage is development. At this stage, the preparation of teaching materials is carried out, the preparation of teaching materials, the development of images and videos is carried out, the making of learning videos, the creation of evaluation questions, and the determination of product design, the next

stage is the implementation of the product to be developed. At this stage, it will be implemented to material content experts, learning design experts, learning media experts, field practitioner experts and trials to students of the fifth semester of the Faculty of Sports and Health, Ganesha Education University. The last stage is evaluating the products that have been implemented and improving if there are inputs and suggestions.

Based on the validity test conducted with experts, namely Mr. Dr. I Ketut Semarayasa, S.Pd., M.Or., AIFO-P as expert 1 and Mr. Dr. I Made Satyawan, S.Pd., M.Pd. as expert 2, digital flipbook-based teaching materials were declared relevant. Furthermore, an expert test was carried out to assess the suitability of the teaching materials, by involving Mr. Dr. I Ketut Semarayasa, S.Pd., M.Or., AIFO-P as an expert on learning content/material, Mr. Prof. Dr. I Made Tegeh, S.Pd., M.Pd. as a learning design expert, Mr. Dr. Kadek Yogi Parta Lesmana, S.Pd., M.Pd., AIFO-P as an expert in learning media, and Mr. Dr. I Made Satyawan, S.Pd., M.Pd. as a field practitioner expert, and a trial will be carried out on students of the Penjaskesrek Study Program in the fifth semester (five) with three stages, namely individual trials, small group trials and large group trials. The results of the assessment can be seen in the following **Table 2.**

Table 2. Results Percentage: Switch/expert

Research Subject	Product Eligibility (%)	Remarks
Expert in Learning/ Material Content	100 %	Highly Relevant
Learning Design Expert	83 %	Relevant
Learning Media Member	98, %	Highly Relevant
Expert Field Practitioner	98, %	Highly Relevant

The implementation stage is the process of applying flipbook-based digital teaching materials in accordance with the development objectives. The implementation was carried out through individual, small group, and large group trials with fifth-semester students majoring in Physical Education, Health, and Recreation, Faculty of Sports and Health, Ganesha University of Education. The trial results showed the following achievement percentages

Based on the **Table 3** of the validity test of experts as well as individual, small group, and large group trials, digital-based teaching materials (flipbooks) on the basic block technique material in sepak takraw learning are declared very relevant and suitable for use.

Table 3. Student Trial Respondent Results

Research Subject	Product Eligibility (%)	Remarks
Individual Trials	95,4 %	Highly Relevant
Small Group Trials	96 %	Highly Relevant
Large Group Trials	95 %	Highly Relevant

This development research uses the ADDIE (Analysis, Design, Development, Implementation, and Evaluation) model and is aimed at students of the Physical Education, Health, and Recreation Study Program, Faculty of Sports and Health, Ganesha University of Education. Thus, the digital flipbooks developed can be an effective learning medium to support the sepak takraw learning process.



Figure 2. Flipbook Development Results

This digital flipbook can be accessed via the following link: https://go.undiksha.ac.id/SmMvY Teaching materials are an essential component in the learning process because they function as the main means for educators to convey material or knowledge (Nafidah & São Paulo, 2021). In (Darmayanti & Amalia, 2024). addition, teaching materials are materials that are

systematically arranged so that they can be studied and understood by students before teaching and learning activities take place. According to (Darmayanti & Amalia, 2024), the use of digital teaching materials in learning can increase social sensitivity, critical thinking skills, and the effectiveness of practice. Meanwhile, research (Widodo et al., 2021), states that teaching materials are required to be relevant to the needs of educators and able to support the effectiveness of learning. In (Talitha et al., 2023), students' skills include aspects of creativity, activeness, collaboration, and insight in managing and communicating knowledge through digital media. Meanwhile, (Nenohai et al., 2022), stated that digital teaching materials are considered very suitable for use because they can increase learning effectiveness, develop critical thinking skills, encourage student creativity and collaboration, and broaden digital horizons. teaching materials are to meet the needs of an educator and can be used to support the learning process (Utami & Atmosphere, 2021). The research conducted by the researcher is in line with the fact that this digital teaching material is an innovation in the learning process designed to strengthen the competence and capabilities of students in mastering the material by utilizing technological support (Prastyo et al., 2021).

CONCLUSION

This study concludes that digital teaching materials based on flipbooks on basic block techniques in sepak takraw learning were successfully developed through the ADDIE model by involving fifth-semester students of the Physical Education, Health, and Recreation Study Program, Ganesha University of Education. Validation through individual trials (95.4%), small groups (95%), and large groups (96%) using a questionnaire instrument showed a very high level of relevance. These findings confirm that digital flipbooks are feasible and effective for use as a learning medium for sepak takraw and have the potential to benefit clubs, coaches, and sports study programs in various educational institutions.

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