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Development of digibook learning media for a comprehensive shooting practice model

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Abstract

This research is motivated by the low shooting accuracy of female futsal athletes at the Padang Academy Futsal Club and the lack of a structured training model applied by coaches. The purpose of this research is to develop a learning media in the form of a game-based Digibook that contains a comprehensive shooting practice model to improve athletes' shooting skills. The method used is Research and Development (R&D) with the ADDIE (Analysis, Design, Development, Implementation, Evaluation) model. Data was collected through questionnaires, observations, and structured shooting tests, then analyzed quantitatively and qualitatively. The validation results showed that Digibook obtained a score of 96% from subject matter experts, 86% from coaching experts, and 76% from linguists, with an average validity of 86% in the "valid" category. Early implementation on a small scale shows that Digibook can improve athletes' understanding and motivation in practicing shooting techniques. The conclusion of this study is that Digibook is suitable for use as a learning and training medium to improve the shooting ability of female futsal athletes effectively and systematically.

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INTRODUCTION

Futsal is a dynamic and high-paced sport that requires a wide range of technical and tactical skills (Asgari et al., 2023; D'auria et al., 2022). Among these skills, shooting plays a pivotal role in determining the outcome of a match. The ability to accurately and powerfully shoot the ball into the goal is essential for every player, particularly in competitive settings (Badr et al., 2025; Smerina & Pearlman, 2025). However, despite its importance, shooting skills are often inadequately developed

due to limited training models and ineffective learning media, especially among female futsal athletes in local clubs such as the Padang Futsal Academy.

In many training environments, coaches rely heavily on conventional and repetitive training techniques that may not fully engage athletes or address their individual learning needs (Heung & Chiu, 2025; Khalid et al., 2025). This lack of structured and interactive training often results in low motivation and suboptimal performance, particularly in technical skills such as shooting. Moreover, traditional learning approaches often fail to incorporate digital literacy and modern pedagogical methods that can enhance athlete understanding and execution of shooting techniques (Raja & Çalık, 2025; Rotz, 2025).

To address these challenges, there is a pressing need to develop innovative learning media that can effectively support the acquisition of shooting skills in futsal. One promising solution is the use of digital books (Digibooks) integrated with game-based learning concepts. Digibooks offer a flexible and visually engaging platform that can accommodate various learning styles, allowing athletes to access training materials anytime and anywhere while promoting self-directed learning and deeper conceptual understanding (Alafari et al., 2025; Azmee et al., 2025).

This research aims to develop a game-based Digibook focused on shooting training models for female futsal athletes at the Padang Futsal Academy. The development follows the ADDIE instructional design model, which includes Analysis, Design, Development, Implementation, and Evaluation stages. By involving subject matter experts, coaching professionals, and language specialists, the Digibook is designed to be both pedagogically sound and practically applicable in real training scenarios (Bembridge et al., 2025; Turner et al., 2025).

Through this study, it is expected that the Digibook can serve as a valuable tool in enhancing the technical shooting abilities of female athletes, while also increasing their motivation and engagement during training sessions (Landi et al., 2025; Shi et al., 2025). Ultimately, the development of such media contributes to the broader goal of improving the quality and effectiveness of sports education and athlete development programs in Indonesia.

The novelty of this research lies in the development of a game-based Digibook as an innovative and interactive learning medium specifically designed to enhance shooting skills among female futsal athletes. Unlike conventional training models that rely on repetitive physical drills and lack digital engagement, this Digibook integrates visual, textual, and interactive elements aligned with the ADDIE instructional design model. It also incorporates game-based learning principles to foster motivation, autonomy, and deeper comprehension of shooting techniques. This approach is particularly novel in the context of Indonesian sports education, where the use of technology-driven learning tools for technical skill development in female athletes remains limited and underexplored.

METHODS

This research employs a Research and Development (R&D) approach, specifically utilizing the ADDIE model Analysis, Design, Development, Implementation, and Evaluation. The study aims to develop a game-based shooting training model to enhance the performance of female futsal players at Padang Futsal Academy. The research identifies the problem of low shooting accuracy and proposes a solution through structured training techniques, including small-sided games, simulation under pressure, and detailed modules for coaches. The model is validated through expert input and tested in small- and large-scale trials.

The research procedure begins with analyzing player performance through tournament data, followed by designing a training model that incorporates practical drills and coaching modules. The development stage includes expert validation and initial small-scale testing. Implementation involves applying the model to a larger group of players, while evaluation assesses improvements in shooting accuracy, speed, and decision-making. Feedback from players and coaches is collected to refine the model.

Data collection methods include questionnaires and a structured shooting test, using instruments such as scoring sheets, stopwatches, and goal targets. Quantitative and qualitative data are analyzed to measure the model's validity and effectiveness. Statistical tools such as percentage formulas are used to interpret results, with specific scoring criteria to evaluate improvements. The research is conducted over a three-month period, involving experts, 10 players for small-scale trials, and 15 players for broader implementation.

RESULT AND DISCUSSION

a. Development

On the design of the digibook learning media for a game-based comprehensive shooting practice model for the Padang Academy Futsal Club.

1) Cover

On the cover of the digibook, you can see the title of the training model, logo, futsal shooting image, the name of the author, and the target of the media, namely the Padang Academy Futsal Club. The cover that is made depicts the content of the media presented.

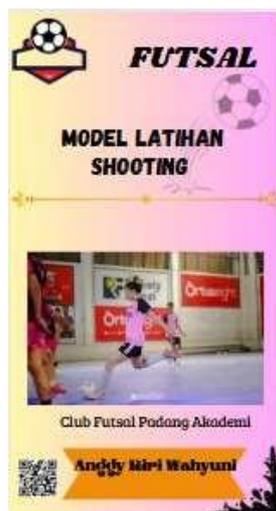


Figure 1. Cover of Digibook Model Exercise

2) Material-Types of Exercise Model

Material that features different types of shooting sequences from easy to most difficult.



Figure 2. Materials Type of Training Model

3) Shooting Training Model Material

Materials that display the name of the exercise model, description and how to do it and the form of the exercise model related to the name of the exercise model.



Figure 3. Training Model

Validity Results of Digibook Training Model

The product development stage is also validated by media experts, material experts, and linguists. Validation was carried out by providing a draft of the Digbook module to increase the motivation of female futsal athletes of the Padang academy futsal club accompanied by assessment instruments. Validation is carried out to find out the advantages and disadvantages of the teaching materials of the Digbook module.

a. Results of Validation of Material Experts

In this study, the media validator involved 1 lecturer, namely, Mr. Dr. Aldo Naza Putra, M.Pd. The results of the media validity test.

Table 1. Results of Validity Test by Subject Matter Experts

Number	1	2	3	4	5	6	7	8	9	10	
Score	5	5	5	5	5	5	5	4	4	5	
Sum							48				
Max Score							50				
Average %							96%				

The results obtained in the material validity test received an average percentage value of 96% in the excellent validity category. The validation results by the subject matter experts show that the Digbook module is worth using.

b. Linguist Validation Results

The language validator in the Digbook module product is Mrs. Yenni Hayati, M.Hum. The results of the language validity test can be seen in table 2.

Table 2. Results of Validity Test by Subject Matter Experts

Number	1	2	3	4	5	6	7	8	9	10	
Score	4	2	4	4	4	4	4	4	3	5	
Sum							38				
Max Score							50				
Average %							76%				

The results obtained in the language validity test received an average percentage value of 76%, with a fairly good validity category.

c. Coaching Expert Validation Results

The expert validator of coaching for the Digbook module product is Mr. Dr. ridho Bahtra, M.Pd. Results of the coaching validity test.

Table 3. Validity test results by linguists

Number	1	2	3	4	5	6	7	8	9	10	
Score	4	5	4	5	5	4	5	4	3	4	
Sum							43				
Max Score							50				
Average %							86%				

The results obtained in the coaching validity test received an average percentage value of 86% with a good validity category. At this stage, the validator provides input and suggestions. This suggestion is a reference by the researcher to revise the Digbook module to be better and can be continued to the next stage. The input and suggestions obtained from language validators are as follows:

- 1) Pay attention to the hyphens/conjunctions of sentences so that the delivery and affirmation of information/materials is conveyed more clearly to the user

- 2) The use of sentences according to the Great Dictionary of the Indonesian Language

d. Implementation

Implementation is one of the stages of ADDIE. This digibook has been tested on a small scale on Padang Academy Futsal athletes. Observations have been made on the implementation of the exercise on a small scale as many as 10 people.

e. Evaluation

The last stage of the ADDIE model is the evaluation stage. At this stage, a revision was made to the Digibook model, a shooting practice model for female futsal athletes to improve shooting skills based on the input and suggestions that have been obtained from the implementation stage.

Discussion

This study aims to develop a product in the form of a digital book (Digibook) containing a training model designed to improve the shooting skills of female futsal athletes. The development process follows the ADDIE model, which consists of five systematic stages: Analyze, Design, Development, Implementation, and Evaluation. In the analysis phase, it was found that although all coaches teach futsal shooting, only 33% implement structured training models effectively. This indicates a gap between instructional intent and actual practice. The developed Digibook is intended to address this gap by providing structured, engaging, and interactive content that supports learning and enhances athletes' motivation to improve their shooting performance (Ade-Ibijola et al., 2025; Thakur et al., 2025).

In the design stage, the teaching materials were created with reference to futsal guidelines and were designed using Canva and Hyzine Flipbook applications. Canva is a graphic design platform that supports various content formats, while Hyzine Flipbook converts Canva designs into interactive digital books. The Digibook includes elements such as a cover, learning objectives, and structured learning activities tailored to futsal shooting. Images used initially were animated but were later replaced with real images featuring the researcher to improve authenticity and clarity. Each image is supported by explanations, functions, and execution steps to make the learning experience more comprehensive. Modern training variations were also included to align with contemporary training practices (Abaszadeh et al., 2025; Abbas et al., 2025).

During the development stage, the Digibook underwent a validation process involving three experts: a coaching expert, a subject matter expert, and a language expert. The coaching expert, Dr. Ridho Bahtra, M.Pd., rated the Digibook as "good" with a validity score of 86%. Suggestions provided were taken into account and used to improve the material. The subject matter expert, Dr. Aldo Naza Putra, M.Pd., gave a higher rating of 96%, categorizing the material as "very valid." His recommendations included diversifying explanations and incorporating interactive game-based elements to help students grasp the concepts more easily. These enhancements were made accordingly (Gandhi & Kumar, 2025; Kardiyem et al., 2025; Ramezani, 2025).

Lastly, the language validation by Dr. Yenni Hayati, M.Hum., yielded a 78% score, categorized as "fairly valid." Her feedback focused on simplifying sentence structures and adjusting terminology to enhance readability for students. Overall, the average validity score from the three validators was 86%, placing the Digibook in the "valid" category. These findings suggest that the Digibook training model for futsal shooting is appropriate and feasible for implementation among

athletes and coaches, offering a structured and effective learning resource that bridges instructional gaps in futsal skill development (Ali et al., 2025; Tai, 2025; Tanveer & Naz, 2025).

CONCLUSION

Based on the results of the research on development and discussion that includes validity, it can be concluded that the Digibook Module that was prepared aims to improve the shooting ability of women's futsal club athletes. The Digibook module on the comprehensive shooting practice model obtained a percentage score of 96% from material experts, 86% from coaching experts, and 76% from linguists. The result of the average validity percentage was 86% with the category of good validity level. Declared suitable for use as a comprehensive shooting training model for the Padang Academy Futsal Club.

CONFLICTS OF INTEREST STATEMENT

Regarding this study, the author declares that there is no conflict of interest.

AUTHOR CONTRIBUTIONS

Study concept and design: Anggi Riri Wahyuni. Acquisition of data: Roma Irawan. Analysis and interpretation of data: Tjung Hauw Sin. Drafting the manuscript: Anggi Riri Wahyuni. Critical revision of the manuscript for important intellectual content: Atradinal Atradinal. Statistical analysis: Anggi Riri Wahyuni.

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