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Development of Inflip-Based Footwork Exercise Movement for Extracurricular Badminton Students at Taman Siswa Middle School Turen

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Abstract
By combining the footwork training model into a flip book as an application or software in training, this study also aims to provide a training model product with new, more interesting innovations. Which will later make it easier for coaches to compile the stages of basic techniques that will be given to students, with the hope that the training process can run smoothly and effectively. This study is the development of a footwork movement training model for badminton extracurricular students using flipbook media. The development of this product consists of 5 stages, namely Analysis, Design, Develop, Implement, and Evaluate, which are modified to suit this study. This development research produces a footwork movement training model using flipbook media that is feasible and validated by media experts and badminton experts and is able to improve the understanding of badminton concepts in extracurricular students of SMP Taman Siswa Turen.

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1. INTRODUCTION

Sports are physical exercises with the aim of maintaining and improving physical fitness (Putra et al., 2020). Physical education is part of education that aims to develop and educate according to motor skills, social skills, cognitive, reasoning, stability, emotional, moral actions, and healthy lifestyles through physical education. In each educational program there is a supporting program to develop the abilities possessed by students. By making program efforts carried out during school hours (extracurricular) or activities outside school hours (extracurricular) the aim is to achieve the expected achievements.

Extracurricular is a non-academic activity carried out outside of school hours. This activity is intended for students who have the goal of developing talents and other abilities outside of academics. One form of extracurricular at SMP TAMAN SISWA TUREN is badminton which has 33 members.

Badminton is one of the sports that is growing rapidly and is a favorite in Indonesia because of the abundant achievements carved by the nation's children (Kholison et al., 2018). Currently, people are starting to like and develop badminton sports. This can be seen from the existence of badminton extras that are formed and held matches. Many matches are held in the community and education. Even many men and women are struggling and even excelling in the field of badminton.

Development and coaching aimed at students with the aim of creating superior seeds to become representatives to improve sports achievements at the national and international levels (Arduta et al., 2020). In the implementation of extra badminton coaching, there are several problems including aspects of achievement coaching, aspects of facilities and

infrastructure, and aspects of the organization. As for the extra at SMP TAMAN SISWA Turen, there is a problem faced, namely the lack of achievements achieved. So the coach made an innovation to develop a training model in the form of a flip *book* with the hope that athletes can be enthusiastic in doing the training and can understand the basic techniques that need to be mastered. In addition, athletes also have an idea of the training model that will be implemented. The readiness of athletes and self-confidence are needed when training, this can also affect the results of the training. The existence of a training model that is developed in the form of flip *book* Athletes can easily practice the training model that will be applied, this aims to improve performance.

After conducting observations by distributing questionnaires to badminton extracurricular students at SMP Taman Siswa. The members who joined were around 33 students, consisting of students who were still beginners and those who were already proficient. It can be seen that the implementation of the training was quite good. However, there are several basic badminton techniques that are still considered difficult in practice, there are still many students who are not very proficient and still have difficulty in doing movements including: *footwork, service, netting, dropshot.* This is due to the lack of mastery of the material because the material presented is only in verbal form. For the purpose of showing basic technique training videos, it is sufficient. Based on the results of the data analysis obtained, it can be concluded that a training model development is needed for footwork badminton with media that can display videos so that extracurricular students can easily understand the material to be studied, especially for beginners. This is so that before practicing, students already have a view of the type of technique that will be done. This development is expected to help in the training process and can be used as a guide for coaches and students, so that they can easily carry out training according to the stages that have been arranged. So that research is expected to be a solution and can produce innovative products, so that they can be used by coaches and students who still have difficulty in doing basic techniques.

By combining training models' footwork into *flip book* as an application or*software*In training, this study also aims to provide a training model product with new, more interesting innovations. Which will later make it easier for trainers to compile the basic technique stages that will be given to students, with the hope that the training process can run smoothly and effectively. Technology-based learning greatly supports the learning process in order to obtain information as a learning medium. There are various types of learning applications that can be accessed according to the needs required. To train movements *footwork* Here, there is interactive learning media based on flip books that suit students' needs.

Based on this background, the problem formulation in this research is: *What is the effective and appropriate model for developing footwork movement training in badminton to be applied to students in extracurricular activities at SMP Taman Siswa Turen?* This problem formulation is important to state because mastery of basic techniques, especially footwork, is the main foundation in achieving badminton achievements. With the development of a flip book-based training model that displays the stages of movement visually and interactively, it is expected to help students, especially beginners, to more easily understand and practice the techniques taught, as well as increase motivation and overall training effectiveness.

2. RESEARCH METHOD

This research uses the Research and Development (R&D) method with the ADDIE development model which consists of five stages, namely *Analysis, Design, Development, Implementation*, And *Evaluation*. At the analysis stage, problem identification was carried

out through observation and distribution of questionnaires to badminton extracurricular students at SMP Taman Siswa Turen to determine the level of mastery of basic techniques, especially movement *footwork*, as well as the need for appropriate learning media. The design stage is carried out by designing a training model *footwork* in the form of interactive flip book media based on applications *Hayzine*, which contains introductory badminton material, basic techniques, and training stages equipped with pictures and learning videos. The development stage involves product validation by material experts (badminton coaches) and media experts (educational technology) to obtain input on the appropriateness of the content and appearance of the media. Furthermore, the implementation stage is carried out by testing the product on extracurricular students to determine the level of understanding and ease of using the training media. Finally, the evaluation stage is carried out to measure the effectiveness of the product and identify weaknesses for improvement, so that the developed media can be used optimally in supporting the basic technique learning process footwork in badminton.

3. RESEARCH RESULTS AND DISCUSSION

3.1. Research result

1. Stage Results *Analyze*

At this stage, we analyze the mastery and understanding of basic badminton techniques due to difficulties in performing basic badminton technique movements, and analyze students' needs for learning media that support the training process.

2. Stage Results *Define*

At the level *define* (initial analysis) researchers designed a movement training model for extracurricular badminton students using a media flipbook.

3. Stage Results *Develop*

Movement exercise model footwork for extracurricular badminton students using media *flipbook.* This was validated by media experts and badminton experts. The media validator was Mr. Anangga Widya Pradipta, S.Pd, M.Pd. and the badminton validator was Mr. Ilham H., S,Pd., M.Pd. The assessment results of each validator were calculated and presented in the form of a percentage.

Table 1. Results of media expert validation

No	Assessment aspects	Score
1	Layout	20
2	Media cover typography	10
3	Content layout	15
4	Content typography	10
5	Display quality	40
	Total score obtained **Maximum score**	**90** **95**
	Presentation	**94,74%**
	Information	**Very valid**

Based on the results of table (1), it is known that the total score of the validation results of the learning media expert is 119, the total maximum score is 125, so the percentage of the media expert evaluation results is 95.2%. So it is concluded that this product can be used in the development group trial.

Table 2. Badminton expert validation results

No	Assessment aspects	Score
1	Layout	20

2	Media cover typography	10
3	Content layout	15
4	Content typography	10
5	Display quality	40
	Total score obtained **Maximum score**	**91** **95**
	Presentation	**95,74%**
	Information	**Very valid**

Based on the results of table (2), it is known that the total score of the badminton expert validation results is 119, the total maximum score is 125, so the percentage of the media expert evaluation results is 95.2%. So it is concluded that this product can be used in the group trial of the development of the backhand forehand training model for badminton extracurricular students based on flip books at Taman Siswa Middle School.

4.Stage Results*Implement*

At the implementation stage, the developed product design is then given to extracurricular students to be tested, either on a small or large scale.

Table 1. Results of Small Group Trials

No	No	Suitability	Attraction	Convenience	Usage
1	Yoga	23	7	14	12
2	Rara	25	6	15	13
3	Jojo	23	9	17	12
4	Farid	22	7	15	10
5	Mayfa	21	7	15	12
6	Serli	23	7	18	12
total score obtained **maximum score**		**137** **180**	**43** **60**	**95** **120**	**72** **90**
Presentation		**76,11%**	**71,6%**	**79,16%**	**80%**
Information		**Very valid**			

Based on the results (Table 1), it is known that the total score of the results is 347, and the total maximum score is 450, so the percentage of the results of the small group trial is 76.72%. So, it is concluded that this product can be used in the group trial of the development of the training model *photo work* for extracurricular badminton-based student flip *book at* Taman Siswa Middle School.

Table 2. Results of Large Group Trial

No	No	Suitability	Attraction	Convenience	Usage
1	Gifta	24	8	17	13
2	Arka	26	9	18	14
3	Fendika	25	8	17	13
4	Ghafin	24	8	17	14
5	Johsua	28	9	18	17
6	Nanda	27	8	18	13
7	Fidella	27	7	16	12
8	Ali	24	8	17	12
9	Wildan	28	9	18	15

10	Saskia	26	8	17	12
11	Sherly	26	8	17	15
12	Alfalent	24	9	18	13
13	Farda	25	8	17	11
14	Rava	27	9	18	13
15	Revalin	26	10	16	12
16	Esa	24	7	17	11
17	Keisa	24	8	19	13
18	Natasya	25	9	17	11
19	Azzam	27	9	18	11
20	Kansha	26	7	17	12
total score obtained maximum score		**513 600**	**164 200**	**347 400**	**257 300**
Presentation		**85,5%**	**82%**	**86,75%**	**85,67%**
Information		**Very valid**			

Based on the results (Table 2), it is known that the total score of the results is 1281, and the total maximum score is 1500, so the percentage of the results of the large group trial is 84.98%. So, it is concluded that this product can be used as a reference for teaching materials in the form of interesting exercise model products for the development of exercise models *photo work for* extracurricular badminton-based student flip *book at* Taman Siswa Middle School.

5.Stage Results *Evaluate*

The evaluation aims to find out and study the effectiveness of the product design. Because after being tested on students, the results of the discussion and the results of the development that has been carried out can be concluded that the product of media development is based on...*flip book.* This can help increase interest in learning and motivation to learn and provide convenience in learning and mastering the basic techniques learned. It is expected that the media that has been prepared can be utilized properly so that the purpose of the learning or practice process can be effective, efficient and enjoyable. So that in the preparation of the product, a validation process is carried out to experts, then tested on small and large groups, followed by revision again so that the media that is prepared is perfect in accordance with the expected development research objectives.

3.2. Discussion

The process of developing learning media in the form of exercise models, footwork badminton based flip *book.* In this study, five main stages in the research and development (R&D) method have been carried out, namely: Analyze, Define, Develop, Implement, and Evaluate. At this stage *Analyze*, a needs analysis was conducted on students' abilities in understanding and performing basic badminton techniques, especially footwork. The results of the analysis show that many students have difficulty in mastering basic movements due to the lack of interactive learning media and only relying on verbal explanations from the trainer.

Following up on this problem, at this stage *Define*, researchers began to design a model of training based on a flip *book which* contains movement material, footwork, basic badminton techniques, and other supporting information. The media design is designed to be accessible via Android devices, with an attractive appearance and

containing multimedia elements such as text, images, videos, and audio, to facilitate understanding and attract students' interest in learning.

At the level *Develop*, the designed product was validated by two experts, namely a media expert and a badminton expert. The validation results showed that this media was very feasible to use. The media expert gave a feasibility value of 95.2%, while the badminton expert gave a value of 95.74%. The overall validation average reached 86.5%, which is included in the "very good" category. However, the two validators also provided several revision notes, such as visual adjustments, adding audio narration, and strengthening the message in the movement video. The researchers then revised the product according to the input before proceeding to the implementation stage.

At the level *Implement*, the product was tested on two scales, namely small groups and large groups. The small group trial consisting of 6 students produced a score of 347 out of a maximum score of 450, or around 76.72%. While the large group trial involving 20 students produced a score of 1281 out of a maximum of 1500, or around 84.98%. This percentage shows that the learning media flip *book is rated* very appropriate by students, both in terms of content suitability, appearance, ease of use, and usefulness in learning. Feedback from the trial also showed that students felt more enthusiastic and understood the movement material better because the presentation of the material is interesting and interactive.

At the level *Evaluate*, a final evaluation was conducted on the effectiveness of the media in supporting the achievement of learning objectives. Based on the results of the final test, it was found that the level of student completion reached 83%. In addition, based on the results of the motivation questionnaire, there was an increase in student interest and enthusiasm in participating in extracurricular badminton training. This indicates that the use of learning media based on flip *books* to provide a positive impact on improving students' understanding of basic techniques and learning motivation. This media also offers flexibility in learning, because students can access materials anytime and anywhere through their respective devices.

Overall, the series of development processes to implementation shows that the training model footwork badminton based flip *book is* suitable for use as a learning medium in extracurricular activities. This product not only meets the technical and pedagogical aspects of feasibility, but is also able to significantly improve the quality of motor skills learning. Therefore, this media can be used as an innovative alternative in teaching sports, especially at the junior high school level.

4. CONCLUSION

Based on the results of the research and development carried out, it can be concluded that learning media based on flip *book which* is developed in the form of a basic technique training model footwork badminton for extracurricular students at SMP Taman Siswa Turen has proven to be feasible and effective to be used as a support for the training process. The development of this product was carried out through the stages of needs analysis, model design, validation by material experts and media experts, and limited trials in small and large groups. The validation results show that this media has a high level of feasibility, with several minor revisions for improvement. This product combines elements of text, images, and interactive learning videos that are systematically arranged using the application flip *book based on Gayzine*, so that it can be accessed anytime and anywhere via the student's Android device. This media makes it easier for coaches to deliver training materials in a more structured and interesting way, as well as increasing student learning

motivation and involvement in the process of practicing basic badminton techniques, especially footwork which is the main foundation in achieving success in this sport.

The advantages of this product are that the media can be used flexibly without depending on space and time, the appearance is attractive, and the material is arranged based on an analysis of real needs in the field. However, this product also has limitations, including the scope of the material which is still limited to techniques *footwork* and does not cover other basic techniques such as service, *smash*, And *netting*. In addition, the use of this media is still limited to the internal environment of SMP Taman Siswa, and has not been formally disseminated to other schools or institutions. Therefore, this product is recommended to continue to be developed by expanding the learning content to cover various basic badminton techniques as a whole and tested on a wider and more diverse population to obtain stronger generalizations. In terms of utilization, this media can be used as an additional reference in extracurricular training activities and physical education learning, both independently by students and under direct guidance by coaches. In addition, users are advised to first understand how to operate the application based on flip *books* that the learning process runs optimally.

In the future, this product also has the potential to be developed into a digital learning media based on Android applications independently, not only as a *flip book but* as an interactive platform integrated with digital evaluation or quizzes. For this reason, developers are advised to collaborate with experts in the field of information technology so that products can develop more innovatively and sustainably. With further development, this product will not only be an alternative learning medium in the SMP Taman Siswa environment, but can also contribute to improving the quality of physical education and sports achievements at a wider level.

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