



JUARA: Jurnal Olahraga

E-ISSN 2655-1896 ISSN 2443-1117

<https://doi.org/10.33222/juara.v7i1.1375>



Development Of Physical Fitness Teaching Materials E-Book Using Flipbook Maker

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Info Artikel

Article History:

Received 12 July 2021

Approved 04 September 2021

Published 08 November 2021

Keywords:

*Teaching Materials,
Physical Fitness,
Flipbook*

Abstract

Physical fitness is essential in maintaining body condition during a pandemic. In physical education learning, delivering exciting and media-based technology material increases students' interest in learning activities. This research aims to develop physical fitness teaching materials based on flipbook maker media for junior high school age. The design of this research refers to the 4D development model, namely, the analysis is carried out through four stages: (1) Define, (2) Design, (3) Development, and (4) Disseminate. This research resulted in a flipbook-based physical fitness teaching material product that had been evaluated by three experts and was declared worthy of a trial. This study uses a total of 30 students. The data analysis technique used in this study used quantitative descriptive statistics with the effectiveness test using the t-test. The study results resulted in an e-book product of physical fitness teaching materials using traditional flipbook maker-based games that have been tested and validated by experts with appropriate categories and can increase students' physical fitness levels and develop students' talents and interests in participating in physical education learning activities. So it can be concluded that physical fitness teaching materials through traditional games based on flipbook maker media can improve the physical fitness of junior high school-age students.

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INTRODUCTION

Physical education is essential in school-level education to improve students' fitness levels to support learning activities. Physical education is a process by which a person acquires physical, mental, social skills

and optimal fitness through physical activity (1). Furthermore, another understanding reveals the educational process that uses physical activity to help individuals acquire fitness skills, knowledge, and attitudes that contribute to optimal development and well-being (2). The implementation of physical

education in schools can develop students in a more optimal direction. Students will get the most appropriate place to express personal impressions, creative expressions and understand human motion with physical education.

The primary purpose of learning physical education in schools is to monitor students to improve their movement skills and make them feel happy and willing to participate in various activities. In addition, in physical education, there is an interaction between students and their environment through physical activities that are managed systematically towards a complete human being (3). However, the study results found a lot of time wasted in physical learning activities at school. For example, teachers spend 31.9% of class time on explanation, 18.2% of class time on classroom management, and 11.9% on organizing activities.

This study also shows that students' average time spent exercising is about 9.5% of all lessons (4). Suppose the conditions in the field indicate this. In that case, the level of physical fitness shown through the Sports Development Index data states that physical fitness, especially at the student level, is still very lacking. 45.97% less; 37.56% moderate; 5.66% good; and only 0% very good (5). During the field observation activities, the researchers observed the seventh-grade students at SMP N 11 Bekasi City.

The results of observations on physical education learning activities with material

show the learning model is still teacher-centered. Students become inactive and tend to be monotonous learning activities, and students are not free to do movement activities. To overcome the existing problems that aim to increase student participation in physical education learning activities, especially in physical fitness material through traditional games. The game comes from wordplay. Playing is an activity that is carried out voluntarily based on pleasure, fosters spontaneous activities aimed at obtaining happiness, creates a sense of awareness that playing well needs to be trained, cooperates with friends, respects each other's opponents, knows the abilities of friends, obeys the rules and knows their abilities alone (6).

Another opinion states that playing is a fun activity, serious and done voluntarily. Still, playing is also serious because it provides an opportunity to increase children's feelings to master something to create a sense of being an important human being (7). Games and play have a meaning for socializing children where games are used to bring children into the community so that children's abilities and potential can be measured (8). In games, children put the limitations on the world of play into a show or contest that includes boundaries of place, time, following clearly stated rules and goals (9). So that the game has an essential contribution in learning physical education, which also has a total potential value. Traditional games are identical to the games people played in ancient times, where conventional game activities were carried out

in groups. The traditional game structured in such a way affects psychomotor, cognitive development, and emotional children(10). A study stated that the game responds to motor behavior (skill execution), which is carried out by selecting and implementing motor skills with coordination time and accuracy of motor actions (11). Traditional games have critical criteria in physical education. Research results mention that epistemologically traditional games make it possible to consider the relationship between physical activity and fashion, history, and society. Pedagogically traditional games have a role in designing physical education curriculum based on local culture. Didactically traditional games encourage teachers to develop and combine culture and physical activity in the school environment (12). In addition, traditional games are a means of playing for children. Besides being beneficial for children's health, fitness and growth, and development, there are also positive values in traditional games such as honesty, cooperation, sportsmanship, help, responsibility, discipline, and many more. These things can build children's character(10).

In many sporting events and even the Olympics, in addition to promoting through the media, many Western European traditions are implemented in sports at the Olympics to foster tradition (13). Traditional games of physical activity and games have become a field of particular interest. Likewise, physical fitness activities associated with traditional games developed by researchers through

teaching materials using flipbook applications have the same hope. Apart from solving problems encountered in the field, they can also grow and create traditions that are currently not practiced by many children at this age. School. Traditional games used to solve physical fitness problems for junior high school students use Egrang, Gobak Sodor, and Balap Karung. The three games have elements of physical fitness, including body strength, body flexibility, speed of movement, and reaction ability (14). A study stated that through the game Gobak Sodor, there was an increase in agility, which is one of the elements of physical fitness experienced by high school students in Ciamis(15).

Flipbook is an application that supports learning media that helps the learning process that is glued to writing and can be included in motion animation, video, and audio, making learning media fun and not monotonous (16). The study results also stated that in calculating the level of stress in students caused by too many assignments and minimal physical activity(10). So the researchers developed an e-book of physical fitness teaching materials using a flipbook maker to solve problems found in the field.

METHODS

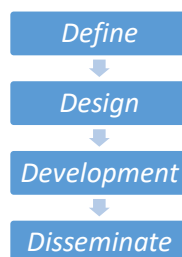
There are four stages in this research model, namely (1) Define, (2) Design, (3) Development, and (4) Disseminate (17). In the **(1) Define** stage, the researcher carried out activities to define and analyze the importance

of developing an e-book of physical fitness teaching materials using a flipbook maker and to analyze the feasibility of the product being developed. This stage is carried out to find out the deficiencies in the product, including by conducting need analysis activities to determine the urgency of product development. The next step is to perform a performance analysis that explores deeper information about students' knowledge about e-books of physical fitness teaching materials using flipbooks maker.

(2) Design is a stage carried out by designing the product development process flow. Researchers carry out a systematic approach by determining learning objectives, activity scenarios, and evaluation tools for physical fitness results in physical education learning. **(3) Development**, namely the product realization stage, where the development stage is adjusted to the design

stage, which is then validated by physical fitness experts, game experts, and media experts. Validation is carried out to obtain product quality which includes aspects of originality, innovation, and conformity with physical fitness materials, **(4) Disseminate** is a stage for implementing products that have been developed, namely e-books of physical fitness teaching materials using traditional games based on flipbook maker. This stage is carried out to find out the results of the product effectiveness test using experimental research pretest-posttest control group design (18) to 30 students in Junior High Schools 1, 2, and 3 Bekasi City with a period from March to June 2021 through the Zoom application to facilitate implementation activities during the Covid-19 pandemic. The following is a chart of the 4D development model carried out by researchers:

Figure 1. 4D Development Model



The research instrument for data collection in this development research used a questionnaire using a Likert scale using a percentage feasibility calculation, namely by calculating the overall data and multiplied by 100% (18). Meanwhile, to test the product's implementation results using the Indonesian

Physical Fitness Test (TKJI) for ages 13-15 years, which includes a 50-meter run test, 60-second pull-up, 60-second sit-up, vertical sit-up, vertical jump, and 1000-meter run for men, and 800-meter run for girls (5). The data analysis requirements test in this study used normality, homogeneity, and t-test tests to

determine the effectiveness of the product developed by the researcher.

FINDINGS AND DISCUSSION

Findings

The implementation of research conducted on 30 junior high school students 1, 2, and 3 of Bekasi City showed differences in the level of physical fitness before and after the implementation of product development. The following are the findings during research

activities based on the 4D development research steps carried out by researchers:

(1) **Define**, at this definition stage the researcher conducts a needs analysis of 10 grade VII students, namely by distributing a questionnaire to define the importance of developing an e-book product for physical fitness teaching materials using traditional games based on flipbook maker, the following are the percentage results from needs analysis through distribution questionnaire:

Table 1. Results of Needs Analysis

No	Indicator	Answer	%
1.	Knowledge of physical fitness teaching materials e-book	Don't	100
		Know	
2.	Knowledge of variations in physical fitness material	Don't	100
		Know	
3.	Ease of physical fitness learning media	Less	100
		Easy	
4.	Approval for the development of flipbook maker-based physical fitness instructional e-books	Strongly agree	100

Based on table 1 regarding the results of the needs analysis found in the field, it can be defined that students do not know e-books of physical fitness teaching materials, so that students are less interested in the learning carried out, students do not know variations in physical fitness so that education seems monotonous, Students feel that the media used by the teacher for physical fitness material it is not easy to use and all students agree if an e-book of physical fitness teaching materials is developed using traditional games based on flipbook maker. These observations indicate

that it is necessary to create an e-book of physical fitness teaching materials.

(2) **Design**, at this design stage, is to determine the steps that must be taken to develop an e-book of physical fitness teaching materials using traditional flipbook maker-based games. The initial design of this study begins with the define step by conducting a needs analysis which is used as a basis for defining the needs of students in learning activities, the obstacles experienced by students, especially in the material of physical fitness. At this planning stage, the researcher

compiled a physical fitness reference test that had used a standardized test instrument, namely the Indonesian Physical Fitness Test. The use of this instrument is the initial stage to connect the define and design stages.

The next step is to determine the media users based on electronic books using the Flipbook maker application. Researchers assumed that during the pandemic, all face-to-face activities in learning activities at schools had been limited, so learning activities are

carried out online to disseminate material that will be implemented later. In the dissemination stage, it will be easier to reach students. The use of the flipbook maker also aims to make students more interested in participating in learning activities carried out online because this application can contain information in the form of audio, visual, or a combination of the two. The following is an initial design for product development before entering the development stage:

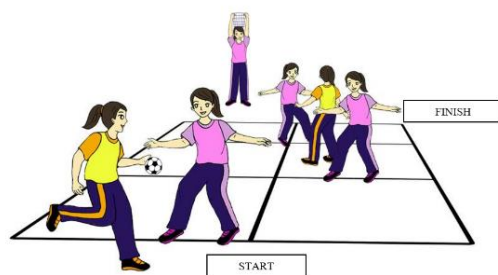


Figure 2. Product Design Development

Figure 2 is a product design for developing an e-book for physical fitness teaching materials using a traditional game based on a flipbook maker, using attractive colored images. This process is still done manually before being designed into an e-book for physical fitness teaching materials using traditional flipbook-based games. Maker. After entering the product design stage, the

researcher conducted expert tests on physical fitness experts, game experts, and media experts, discussed at the development stage.

(3) Development, the initial stage at this development stage aims to produce a physical fitness material learning device that begins with an expert test. The following are the results of tests by physical fitness experts, game experts, and media experts:

Table 2. Expert Test Results

No	Expert	%	Criteria
1.	Physical Fitness Expert	73,7	Worthy
2.	Game Expert	73,8	Worthy
3.	Media Expert	70,15	Worthy
	Total	72,55	Worthy

Overall, based on the expert test results, it is known that the physical fitness expert stated that it was feasible with a percentage value of 73.7%. The game expert noted that it was possible with a percentage of 73.8. The media expert was 70.15%, So that the total of expert tests is 72.55% and is declared feasible to be tested. After the expert test, the next step

is to conduct a limited trial using ten students at Junior High School 1 Bekasi City to determine whether the design of the developed model can be practiced in the field. The following is a summary of the results of the limited trial using a questionnaire to students in the little test:

Table 3. Limited Trial Results

n	Score	P(%)
1	15	75.00
2	15	75.00
3	14	70.00
4	15	75.00
5	12	60.00
6	18	90.00
7	14	70.00
8	13	65.00
9	15	75.00
10	14	70.00
Total	145	73

Based on table 3, the results of the limited trial show that the student's assessment score on the development of e-books for physical fitness teaching materials using

traditional flipbook maker-based games was obtained by 73% with Eligible criteria so that the product can be continued at the next stage.

Table 8. Group Statistics

	Kelas	N	Mean	Std. Deviation	Std. Error
					Mean
Hasil Kebugaran Jasmani	Posttest Kelas Kontrol (konvensional)	15	15.80	2.007	.518
	Posttest Kelas Eksperimen	15	16.93	2.604	.672

After conducting trials in a limited group, the researcher revised the product until it reached the final product, namely the development of an e-book of physical fitness teaching materials using traditional games

based on flipbook maker as seen in the screenshot of the flipbook maker application, which contains physical fitness teaching materials with traditional games following:



Figure 3. Final Product Development

(4) **Disseminate** is the stage of distributing products developed on a broader scale, such as disseminating to schools or other classes by conducting large group trials. This large group trial was carried out after going through the revision and limited group trials, which were distributed to 30 research subjects from 1, 2, and 3 Junior High Schools in Bekasi City. In the output table 5, it is known that the significance value (Sig.) for all data both on the Kolmogorov-Smirnov test and the Shapiro-Wilk test > 0.05 , it can be said that the data is usually distributed. Because the research data is usually distributed, it is possible to use parametric statistics (paired sample t-test and independent sample t-test) to analyze research data.

In the output of pair 1 in table 6, the Sig (2-tailed) value is $0.000 < 0.05$, so it can be ascertained that there is a difference in the average learning outcomes for the Pre-test experimental class with the Post-test experimental type and the output pair two is obtained Sig (2-tailed) value of $0.000 < 0.05$, it can be said that there is a difference in the average fitness results of students for the pre-test control class. To answer the test of

differences in student learning outcomes using products developed by researchers with conventional models.

The output in table 7 obtained the value of Sig. (2-tailed) of $0.0000 < 0.05$, then there is a difference in the average fitness results between the new model and the old/conventional model with the difference in results that can be seen in table 8 descriptive statistical results, it is known that there is a difference in the average results of physical fitness between the new model and the old/conventional model. The average value in the post-test experimental class was 15.80. In the post-test class, the traditional model was 16.80, resulting in an increase of 1.00 between the experimental and control groups.

DISCUSSION

Physical fitness is a person's ability to carry out daily tasks without experiencing significant fatigue and still have energy reserves for other activities (19). The urgency of physical fitness in human needs is essential to improve the quality of health and support different aspects of human life, so this material

must be presented interestingly. Learning requires engaging media for students, and teachers can develop learning media that combines several sources and learning materials in a more practical and efficient form. Teaching materials are resources that teachers use to deliver instructions (20).

Making multimedia-based learning media is done by using software that is open source. The software is Flipbook Maker, which is used to display books or other teaching materials into a digital electronic book in the form of a flipbook. The software can be downloaded for free or for free via internet access (21). Flipbooks have their characteristics, such as flipbooks, which are digital displays that seem like books that are being turned over automatically (22). This software has the advantage of loading content by converting pdf files, images into a digital book (21). Flipbook Maker is software that can change the appearance of PDF files to be more attractive like a book. In addition, Flipbook Maker can also create PDF files such as magazines, digital magazines, flipbooks, company catalogs, digital catalogs, and others (23). So that through flipbooks, teachers can develop learning media in the form of exciting e-books and package with flipbook software. The flipbook has the advantage of increasing enthusiasm for learning through media even without sound, and programmers can make flipbooks enjoyable by adding music that matches the material's content (Assessment, n.d.), not only by adding music to improve the appearance of the e-book. The quality level in

digital book material design is included in the excellent category (Divayana, Suyasa, Ariawan, Mahendra, & Sugiharni, 2019). An attractive design will undoubtedly add value to the developed media. Developing learning materials must, of course, be adjusted to the material to be taught at school. One of the materials is about physical fitness. One of the deliveries of learning materials is by using e-books as a reference for additional student learning materials to increase physical fitness.

CONCLUSION

The results of the study have gone through a series of 4D research stages, which have produced an e-book product for physical fitness teaching materials using traditional flipbook maker-based games, which help increase students' physical fitness levels and develop students' talents and interests in participating in physical education learning activities with categories product is suitable for use. The products are designed to utilize the framework steps, namely from easy to medium and strenuous activities that aim to answer the needs that exist in the field. The effectiveness test results at the disseminate stage are empirically proven that this e-book of physical fitness teaching materials using traditional flipbook maker-based games has a good effectiveness value so that the product is worthy of distribution.

ACKNOWLEDGMENTS

Thank you to the leading supporter of research funding in universities for the 2021 fiscal year by the Ministry of Research & Technology/ National Research and Innovation Agency, Deputy for Strengthening Research and Development.

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