



Development of Basic Pencak Silat Techniques for High School Students

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Abstract

Pencak silat is one of popular martial art originated from Indonesia that is learnt by students from various level. The learning process of pencak silat requires innovative media to help students learn it effectively. This study aims to develop an application-based learning media as a suitable solution to overcome problems related to PSHT martial arts learning material for the Persaudaraan Setia Hati Terate (PSHT) club at high schools. This study employed a research and development (R&D) methodology. The participants were 17 pencak silat student-athletes from the PSHT club or extracurricular program. Observations and interviews were conducted to collect the data. This research completed three expert validations, which include evaluations by coaching experts with an average score of 83.0%, PSHT material experts with an average score of 83.25%, and media experts with an average score of 97.5%. The overall product trial involved 17 student-athletes and was split into two phases: a small group trial with 5 participants, which achieved an 84.58% success rate, and a large group trial with 12 participants, which yielded an 80.90% success rate. Based on these results, the learning media for basic pencak silat techniques for PSHT student-athletes met valid standards and may be used without revision.

Keywords: Extracurricular; learning media; martial arts; pencak silat; student-athlete

1. Introduction

Educational media is a tool for students to investigate information about their studies. Nurrita (2018) asserts that employing visually appealing learning materials can catalyze student engagement during the learning process. Learning media has the potential to make a powerful impact on the future of learning (Roschelle et al., 2020). Hence, in the current era of technical and informational advancements, using learning media is highly beneficial for educational progress. In addition, Yanto (2019) mentions that learning media is a medium that transmits educational content effectively during teaching and learning. Technological advancements have led to an increased need for learning media to meet the needs of education (Shalikhah, 2017). Technology-based learning media can improve education to achieve quality educational results and meet the demands of the times (Sudarmo et al., 2021).

Furthermore, according to Mukhlis et al., (2020), using interactive multimedia in education can enhance student engagement and foster high motivation levels. This is attributed to students' inclination towards learning materials incorporating textual, visual, and audio elements. Hence, based

on the aforementioned experts' viewpoints, it can be concluded that using learning media is essential to enhance students' engagement in the educational process, particularly in the current period characterized by technical and informational advancements. Learning is a pedagogical process that occurs through exchanging knowledge and instruction between educators and students. A complex definition of learning requires educators to teach students (Waziana et al., 2016). Pane & Dasopang (2017) define learning as increasing understanding, knowledge, skills, attitudes, and values. Thus, learning involves educators and students interacting to obtain knowledge, skills, values, and attitudes. All classrooms incorporate learning into their curricula. Both in-class and extracurricular activities are part of a well-rounded education. Dahliyana (2017) defines extracurricular activities as learning outside of school. Extracurricular activities rely heavily on school initiatives. Hambali & Yulianti (2018) believe that extracurricular activities perfect cognitive education to create sustainable affective and psychomotor aspects that can bridge the gap between school and family education. Extracurricular activities help influence academic success and can benefit students (Sudarmo et al., 2021).

Martial arts are taught in schools, notably in physical education and sports. The physical movement skill pencak silat defends against numerous threats. Halbatullah et al. (2019) described pencak silat as an archipelago martial art. Persaudaraan Setia Hati Terate (PSHT) is one of numerous pencak silat programs. As a martial arts organization, PSHT is popular in elementary, junior high, high school, and college clubs. Pencak silat is vital for learning recreational activities and protecting oneself from outside threats. For elementary, junior high, and high school pupils who will attend college, pencak silat can boost academic scores through non-academic achievements. Hariyoko et al. (2018) says studying pencak silat boosts self-confidence, warrior spirit, discipline, and environmental consciousness. Therefore, extracurricular pencak silat students, especially PSHT, must practice good and correct basic techniques. Hariyoko et al. (2018) added that pencak silat is a science related to powerful movement patterns that are beautiful, effective, and can maintain the body, as well as a noble skill based on piety and obedience to God Almighty. Adyanto et al. (2018) further noted that pencak silat emphasises the noble character theory in forming one's attitude and personality. Based on the above opinion, the pencak silat training process also requires attractive learning facilities so that students do not feel bored, especially for students who have just joined the initial level (plain belt) of PSHT extracurriculars at high school. This is also supported by research conducted by Martopo (2017) which states that extracurricular students' basic pencak silat technical abilities are still in the very poor category. Insufficient training schedules and limited teaching materials regarding basic pencak silat techniques are the main factors in this problem.

Triprayogo et al. (2020) found that android-based pencak silat single-kick learning media improves learning outcomes in 32 students with a primary trial value of 88.04%. Other research (Anas & Adi, 2018) on 34 PSHT students found 93% validity in developing android-based A, T, C kicks. The product can be used by PSHT extracurricular students. Additionally, research on the development of offline multimedia teaching materials on eighth-grade integrated science material at junior high school students (Kuron & Tompodung, 2020) yielded 90% results, indicating that iSpring learning media is suitable for use in the learning process. The supporting facilities and infrastructure referred to in this research include places where pencak silat training is carried out, equipment/materials needed for training, and books as learning resources (Asdarina et al., 2022).

Seeing some of the problems presented above, the researcher wants to create a learning media to help students develop their talents, especially for student-athletes who actively join pencak silat clubs or extracurriculars. The results of the needs analysis carried out in advance on 17 PSHT students at plain belt level showed that 100% of PSHT extracurricular pencak silat students had smartphones that could be used to download applications and access the internet, 88.2% that learning media related to PSHT pencak silat material is challenging to find, 76.5% and 70.6% of students have never used applications in the learning process related to basic techniques or material about PSHT pencak silat, 70.6% of students need learning media in the form of applications that can be accessed anytime and anywhere,

and 94.1% of extracurricular students agree that research will be conducted on developing learning media related to PSHT pencak silat material in the form of an application that can be accessed via smartphone. Next, the researcher conducted interviews with extracurricular coaches. The results of these interviews show that students do not understand the basic techniques of PSHT. Additionally, trainers lack media to convey learning material, especially material in the form of theory. So far, the trainer has provided material in theory only via WhatsApp as a medium for discussion and YouTube links to show basic technical movements.

Based on the needs analysis results with students and interviews with extracurricular trainers regarding the learning media to be used, the researchers developed application-based learning media as a suitable solution to overcome problems related to PSHT martial arts learning material.

2. Method

This research used the Research & Development (R&D) method with the modified Borg and Gall model (Sugiyono, 2017). This research aimed to determine the feasibility of Android-based interactive learning media using iSpring Suite and Website 2 APK Builder Pro for learning basic pencak silat techniques in extracurricular activities. The steps used in this research were: (1) needs analysis, (2) design, (3) design validation, (4) design revision, (5) product trial, (6) product revision (7) final product. The following are the modified Borg and Gall research steps:

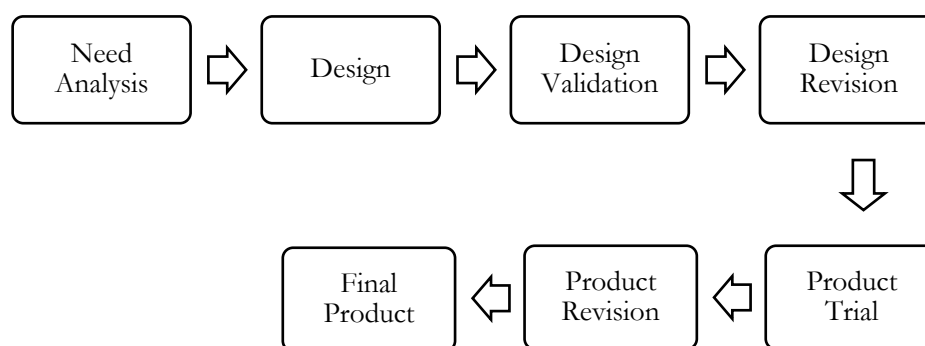


Figure 1. Modified Borg and Gall Model Steps

The needs analysis stage is the stage of collecting information that researchers use as a basis for creating interactive learning media. Researchers conducted a needs analysis online via Google form for PSHT extracurricular pencak silat students to analyze the facts and problems in the field. The product design stage began with the researcher collecting materials to design and generate content. This research yielded a new product with specs. This product was composed using Microsoft PowerPoint, and the learning application was produced using iSpring Suite and Website 2 APK Builder Pro.

The design validation stage in research and development involved three experts in their respective fields. The three experts included one coaching expert, 1 PSHT pencak silat material expert, and one media expert. Coaching experts assessed the training methods section, PSHT pencak silat experts assessed PSHT basic pencak silat techniques, and media experts assessed the content section. In this design validation process, researchers received criticism and input regarding the advantages and disadvantages of the product that had been developed. Thus, researchers could find out the deficiencies in the products that had been created. Design revision improved the developed product. Based on validator feedback, researchers could improve the products until they were usable. After design adjustment, a product trial was conducted.

Researchers incorporated 17 pencak silat students from the PSHT club in this trial phase. The aim of conducting product trials was to obtain data as a basis for improving the product that had been developed. In the trial stage, students tried the application using their smartphones. Once finished, students completed a Google form containing questions about what students thought about the application. Product trials were divided into two stages, namely small group trials and large group trials. Small group trials were carried out on five students representing extracurricular members, and large group trials were carried out on 12 students representing extracurricular members.

Researchers employed a quantitative descriptive analysis using a Likert scale to measure data. This Likert scale measures social phenomena-related attitudes, opinions, and viewpoints (Sugiyono, 2017). Product feasibility was assessed using the following categories:

Table 1. Rating scale

No	Description	Positive Score
1	Strongly Agree (SA)	4
2	Agree (S)	3
3	Undecided (RG)	2
4	Disagree (TS)	1

The formula used to process data from validation results is as follows:

$$V = \frac{TSEV}{S - Max} \times 100\%$$

Description:

V: Validity

TSEV: Total empirical validity score

S-Max: Expected maximum score

100% : Constant number

Adjusting the end of data processing to the product category simplified data analysis inference. The percentage of product attractiveness, appropriateness, and benefits determined the conclusion. Our research and development percentage classification criteria are as follows.

Table 2. Product criteria

Criteria	Description	Meaning
75.01% - 100.00%	Highly valid	Used without revision
50.01% - 75.00%	Valid	Used with minor revisions
25.01% - 50.00%	Invalid	Unusable
00.00% - 25.00%	Highly invalid	Prohibited use

3. Result

This study assessed the viability of produced learning materials for basic pencak silat practices for PSHT clubs in high schools. This chapter discusses the data analysis from coaching specialists, PSHT material experts, media experts, and small and big group trials. Additionally, the solution was developed using supporting programs like iSpring Suite to convert presentation files into HTML and the builder to turn the HTML into an Android smartphone app.

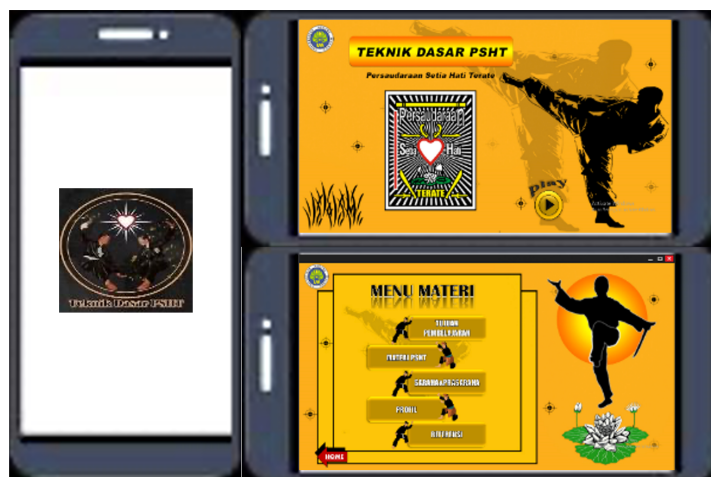


Figure 2. Icon display and main page of development product

Analysis of data obtained from expert validation, small group trials, and large group trials are presented below.

Table 3. Coaching expert data analysis results

Aspect	%	Categories
Compatibility	75	Valid
Clarity	75	Valid
Ease	93.75	Highly Valid
Usability	87	Highly Valid
Average	83	Highly Valid

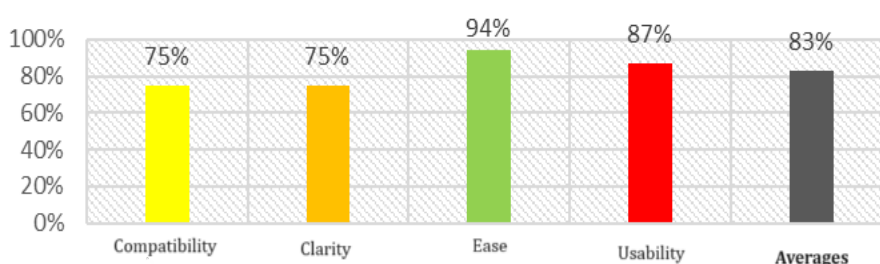


Figure 3. Coaching expert assessment diagram

The coaching expert validation test yielded an average score of 83%. Subsequently, the average scores were categorized based on criteria deemed highly valid and appropriate for both small and large group trials.

Table 4. Design revision from coaching expert

No	Assessment and Suggestions	Description
1.	Add the content of punches and elbows to PSHT teachings so that students can learn these basic techniques.	Revised

Table 5. Material expert data analysis results

Aspect	%	Categories
Suitability	83	Highly Valid
Accuracy	75	Valid
Clarity	75	Valid
Ease	100	Highly Valid
Usability	83.25	Highly Valid

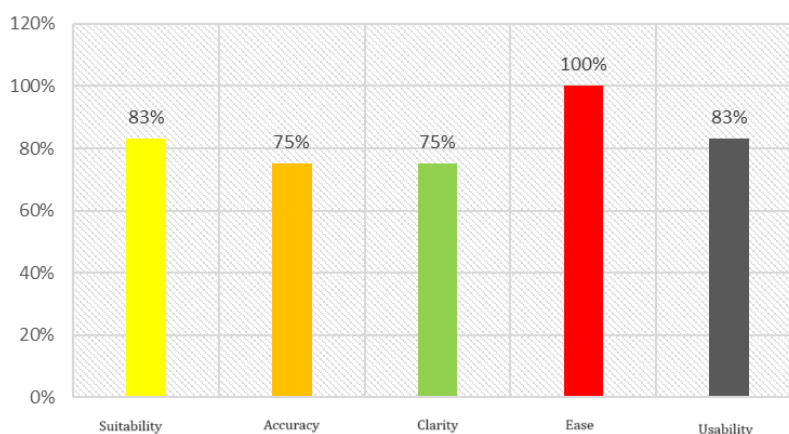


Figure 4. Material expert assessment diagram

The material expert validation test obtained an average of 83.25%. The average results were then converted according to the category with very valid criteria and used to conduct small and large group trials.

Table 6. Design revision from PSHT material expert

No	Assessment and Suggestions	Description
1.	The video content is high quality and easily understandable. To enhance PSHT's objectives, it would be beneficial to incorporate spiritual perspectives on attitudes, including PSHT member students' commitments.	Revised

Table 7. Media expert data analysis results

Aspect	%	Categories
Compatibility	100	Highly Valid
Attractiveness	87.5	Highly Valid
Clarity	100	Highly Valid
Accuracy	100	Highly Valid
Usability	100	Highly Valid
Average	97.5	Highly Valid

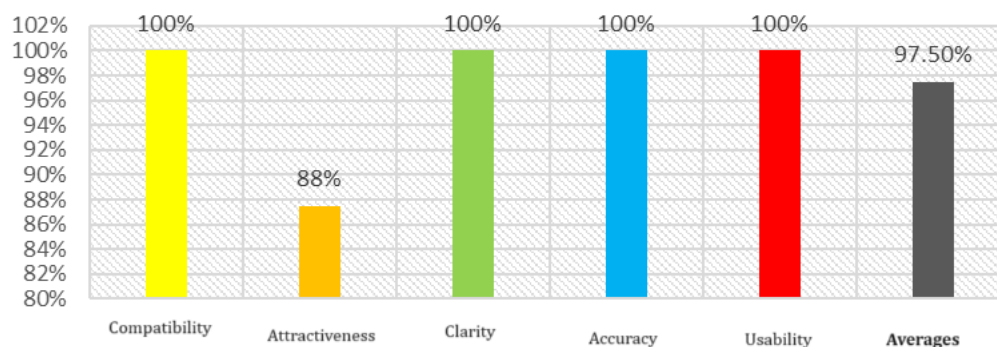


Figure 5. Media expert assessment diagram

This media expert validation test obtained an average of 97.5%. The average results were then converted according to the category with very valid criteria and suitable for conducting small and large group trials.

Table 8. Design revision from media expert

No	Assessment and Suggestions	Description
1.	It is generally advisable to optimize the rearrangement of the visual design, namely the layout on the homepage and the margins of buttons. The play symbol should be avoided unless it is specifically for the video menu.	Revised

Table 9. Small group trial analysis results

Aspect	%	Categories
Compatibility	85	Highly Valid
Attractiveness	86.25	Highly Valid
Accuracy	88.33	Highly Valid
Ease	81.66	Highly Valid
Clarity	81.66	Highly Valid
Average	84.58	Highly Valid

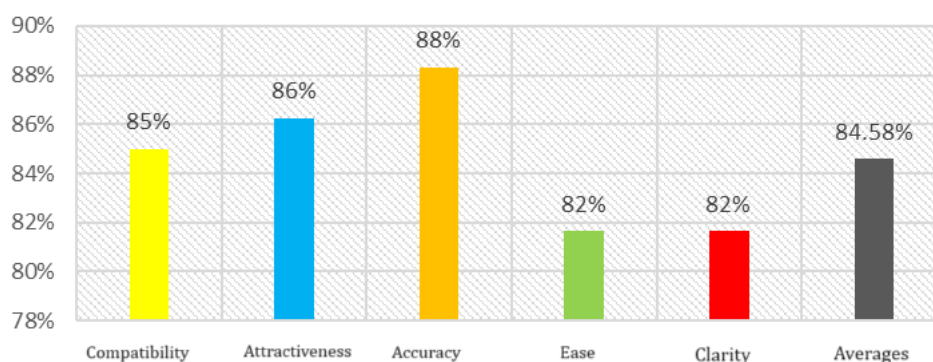


Figure 6. Small Group Trial Assessment Diagram

The data analysis results from small group trials, consisting of five extracurricular student members, yielded a score of 84.58%. According to the feasibility table, the product has successfully fulfilled the requirements of being highly valid and appropriate for use.

Table 10. Test analysis results large group

Aspect	%	Categories
Compatibility	79.16	Highly Valid
Attractiveness	81.77	Highly Valid
Accuracy	75	Valid
Ease	81.59	Highly Valid
Clarity	85.41	Highly Valid
Averages	80.90	Highly Valid

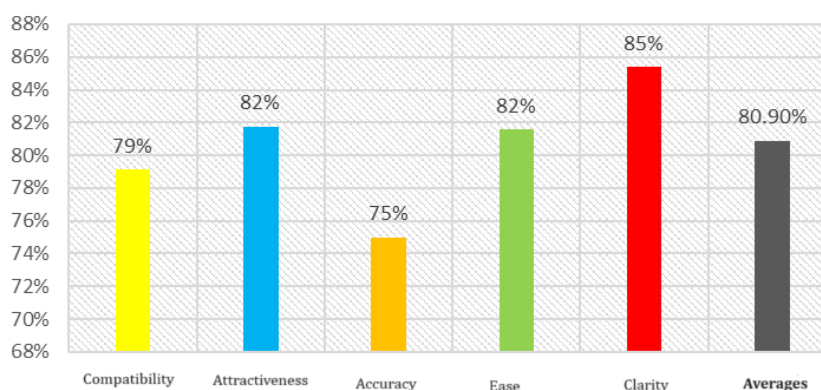


Figure 7. Large Group Trial Assessment Diagram

The data analysis results from extensive group trials involving 12 extracurricular student participants yielded an 80.90% result. The feasibility table indicates that the product has successfully fulfilled the highly valid and appropriate requirements for use.

4. Discussion

The outcome of this research and development endeavor is a pedagogical application for fundamental pencak silat practices designed explicitly for PSHT extracurricular students. This application was created using the iSpring Suite application and web2apk builderpro. The PSHT basic method application offers various elements that assist PSHT extracurricular member students in enhancing learning. According to Hariyoko et al., (2018), the limitations of a person's memory can affect their mastery of content and understanding. Thus, by implementing the PSHT basic technique, which incorporates captivating multimedia elements such as videos, photos, and text, extracurricular students will have enhanced comprehension and retention of the subject, leading to increased motivation and enthusiasm for learning. This is in line with research conducted by Ariyanti et al., (2020) that using the iSpring Suite application can help facilitate the process of delivering material in learning. According to Huda and Apriyanto (2019), the iSpring Suite application is a tool that offers elements within Microsoft PowerPoint that are well-suited for use as educational media today.

In addition, Cahyanti et al., (2019) asserted that the iSpring Suite application, which is built on the Android platform, can captivate students' attention when it comes to delivering educational content. According to Sastrakusumah et al., (2018), the use of the iSpring application in student learning methods is very engaging and prevents students from experiencing boredom. Therefore, based on the viewpoints above, employing suitable multimedia that aligns with the offered content does not eliminate the potential for students to comprehend the delivered material effectively.

Based on the needs analysis of student-athletes registered as active members of the PSHT club, it is concluded that students need the development of learning media that can be used flexibly during the learning process. Therefore, the emergence of the iSpring Suite application to deliver learning has a very positive impact. From the results of validation from coaching experts, it can also be concluded that implementing learning supported by learning media can create pleasant conditions and increase the progress of extracurricular student members.

Aghni (2018) defines learning media as a mediator or communicator that delivers messages to recipients during the learning process. In addition, according to Herliandry et al. (2020), learning media plays a crucial role in the learning and teaching system, as the effectiveness of the learning system can be determined by the choice of media used. Furthermore, the appropriate educational resources will facilitate the learning and teaching process for educators and students (Ayu et al., 2021). According to Agustin & Kurniawan (2021), the media serves as a middleman for transmitting information from the sender to the recipient. According to the media expert validation results, the researchers have developed an application product that offers convenience and benefits to its users.

According to the interviews with the PSHT coach, it is confirmed that the pencak silat extracurricular is considered a part of physical education at school and plays a significant role in molding students' personalities and characters. Pencak silat is a pre-existing educational content that is included in the physical education curriculum and has been taught since elementary school (Sihombing et al., 2022). As per the research conducted by Akbar & Hariyanto (2020), pencak silat is a systematic and organized movement executed with precision and guidance. Additionally, it encompasses four interconnected aspects: spiritual, sports, martial, and artistic. Khoril & Rizanul (2021) noted that pencak silat is a traditional sport, but its development has kept up with the times. In the past, it was used for offense and self-defense, but now it is a competition with distinct movements. The basic pencak silat technique must be mastered. Chaniago & Hariyanto (2018) define fundamental technique as an initial learning method that can be applied to a more thorough training. In pencak silat, in addition to punches and kicks, stance techniques, step patterns, tide movements, avoidance techniques, and falling techniques must be mastered. However, these techniques must be adjusted to the competition category.

According to the PSHT pencak silat material expert validation, extracurricular learning should focus on material points that show PSHT's characteristics to achieve its goals. The research and development items for learning media on basic PSHT martial arts methods are appealing and user-friendly. The PSHT basic technique application product features a main menu encompassing the core content of the basic technique learning material. This includes (1) learning objectives and (2) comprehensive coverage of basic technical material, encompassing the history, fundamental teachings, and techniques of teaching martial arts, practical martial arts, and achievement martial arts. These materials are presented as videos, images, and text. The three main components of the report are (1) facilities and infrastructure, (2) researcher's biodata, and (3) reference list. With the improvement of research and development products in the form of PSHT basic technique application products, it is hoped that teaching basic pencak silat techniques to PSHT club students will help them quickly grasp the material presented and boost the motivation of students participating in PSHT extracurricular activities during the learning process.

Overall, it can be concluded that the items made by researchers are very valid and appropriate for use. The introduction of PSHT basic technique application products in research and development aims to enhance the understanding of basic pencak silat techniques among extracurricular students. This initiative also seeks to boost the motivation of PSHT extracurricular student members during the learning process.

5. Conclusion and Recommendation

As evidenced by the research, it is suggested that PSHT basic technique application products can pique the interest and motivation of PSHT extracurricular members at high school to learn and are thus appropriate for use as a learning media. These products have pretty high success rates with small-group and large-group data.

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