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## Batting tee development in learning basic softball hitting techniques

**Auliyani Fatma and Farida Mulyaningsih**

### Abstract

Playing softball requires players to have a strong foundation in hitting and basic abilities, which are crucial for attacking. There is information about hitting drills with sticks and ball media on batting tees as a means of hitting the ball in softball instruction. The goal of this project is to provide batting tee aids to help students at SMP Negeri 3 Bantan, Bengkalis Regency, learn the fundamentals of softball hitting technique. This will enable the students to hit the ball and gain a better understanding of softball learning. Using the five steps of the ADDIE development model analysis, design, development, implementation, and evaluation this kind of study is development (research and development). In this study, SMP Negeri 6 Bantan served as the small-scale trial. SMP Negeri 3 Bantan served as the site of the extensive trial. The findings demonstrated that: (1) Junior High School Class VIII media batting tee items in PJOK teaching basic softball hitting method content. (2) The media batting tee items in PJOK learning are a highly practical way to employ the basic technique material designed for hitting softball balls. The batting tee media's material expert evaluation yielded an 88 percent percentage value, falling into the very decent category. According to media analysts, media batting tees received.

**Keywords:** Batting tee, softball, hitting, physical education learning, media batting, hitting techniques

### 1. Introduction

Softball is a fun fast-paced game and is taught in schools in physical education learning (Fathoni & Rachman, 2020) <sup>[4]</sup>. Every sport has unique qualities, and softball games are no different. The laws, motion mechanics, and essence of the game all reveal the features of softball games (Walker & Stevens, 2009) <sup>[17]</sup>. Softball is a fast-paced, accurate game that calls for quick reflexes, quick running, accurate hitting, and accurate ball tossing (Garman & Gromacki, 2011) <sup>[5]</sup>. Softball is becoming more and more popular in America and other nations, such as Indonesia. It's a game that can be enjoyable for participants as well as a physical activity (Brittain *et al.*, 2020, Guy *et al.*, 2021) <sup>[2, 6]</sup>. Playing softball requires players to have a strong foundation in hitting and basic abilities, which are crucial for attacking. One of the attacking team's softball strategies is hitting, which involves hitting the pitcher's pitch. The objective is to score in order to protect oneself or assist a base runner in getting to the next base.

Roji & Yulianti (2017) <sup>[13]</sup> the objectives and expectations for studying softball games are outlined in the class VIII teacher handbook. One of the Core Competencies (KI) is KI-3, and it states that students must be able to explain the idea of using certain motion variations to smash little ball swings with a softball. In KI-4, students should be able to practice playing simple softball as well as other tiny ball swing hitting motions with the ball. Further evidence for the above discussion comes from research Putri (2016) <sup>[2]</sup> Students' worries and anxieties over the security of the sports equipment they use can be lessened by teaching them the fundamentals of softball striking skills. Additionally, it can improve pupils' comprehension of the fundamental technical aspects of softball games. Softball is a relatively simple sport to play because it only requires a limited number of basic skills and motions. It is advised that kids be able to hit, run, throw, and catch. This has caused softball to become a preferred alternative to make the subject matter popular in schools (Saputro & Susilo, 2019) <sup>[14]</sup>.

Based on studies carried out by Nainggolan & Manalu (2020) <sup>[10]</sup> Speaking about the adjustment of throwing and catching learning in softball game learning outcomes, it demonstrates that the issue with the subject of his research is students' poor comprehension of the course material, necessitating a teacher-student teaching strategy.

Additionally, most students feel less secure when hitting the ball after learning basic moves, particularly when the ball has not run as smoothly as it should. The necessity for an acceptable strategy or approach to be employed in the delivery of learning information arises from the fact that teachers are using less innovative learning resources. Other issues are also experienced by (Harahap, 2022, Utomo, 2018) [7, 16] the issue lies in the fact that PJOK teachers are unable to provide kids with softball materials due to inadequate facilities and infrastructure. As a result of the dry delivery of the subject and the lack of fresh ideas, pupils contribute less. Furthermore, the average scoring score on the sub-material is lower than KKM or completeness, indicating insufficient usage of assistance aids that are restricted to the school.

According to the findings of interviews conducted with PJOK teachers and students at SMP Negeri 3 Bantan, bored pupils occur when PJOK instruction is combined with softball instruction. The majority of these students are female. This is seen during the learning process when students grumble about learning softball and are not motivated to move. They are also frequently tired. Students' lack of information about playing softball, particularly when it comes to striking the ball they struggle to hit the ball that their teammates throw to them. In addition, even if the PJOK teacher has practiced hitting the ball, students' grasp of hitting softball is also lacking. The survey revealed that PJOK teachers utilize very little media, and that materials related to softball instruction included drills involving hitting a ball stick off of a batting tee. Unfortunately, the lack of batting tee instruments prevents the material from being taught. Students also struggle to hit the ball that is thrown to them by a pitcher or bouncer, which is an issue.

To solve the aforementioned issue, use a batting tee tool to substitute the bouncer that the pitcher threw. However, not all schools have batting tees since they are too costly and cannot be purchased because school funds aren't just used for softball instruction. As a result, a tool in the shape of a place to put the ball the batting tee necessitates development. The batting tee is a tool for hitting the ball, and striking the ball that is placed on it in the strike zone position is a kind of workout (Nurbiantoro, 2018) [11]. When a hitter is practicing hitting the ball precisely in the strike zone, position which is defined as the location of the ball between below the shoulder, above the knee, and above the pitcher's plate is crucial. Holding this batting tee equipment helps pupils hit the ball and comprehend softball instruction better. Researchers are interested in creating a media tool in the shape of batting tees to help students improve hitting accuracy based on the issues and conversations mentioned above, hence the study's title is "Development of Batting Tee in Learning PPJOK Basic Technical Material for Hitting Softball at Smp Negeri 3 Bantan, Bengkalis Regency". It is anticipated that the creation of batting tees will enable students to hit the ball and comprehend softball instruction in order to achieve successful learning outcomes.

## 2. Materials and Methods

Research and development (R&D) is the form of research that is employed; researchers use this type of research to create a product. As stated by Sugiyono (2019) [15] that the research and development process is a technique used to create a specific product and evaluate its usefulness and efficacy. In order to enhance student learning results, this project will concentrate on developing goods in the form of batting tee media for softball game learning. This study's development

model is based on the ADDIE model, which (Branch, 2009) [1] the five steps are Analysis, Design, Development, Implementation, and Evaluation. However, the researcher only uses the Analysis, Design, Development, and Implementation phases because of study constraints. The development process follows this flow.

### A. Analyze

Conduct exploratory research in the form of questionnaires and interviews in the early phases. At SMP Negeri 3 Bantan, Bengkalis Regency, this analysis stage was conducted with the intention of gathering problem-related information and analyzing the needs of teachers and students. The preparation, implementation, management, and data analysis stages comprise the three phases that make up this analysis stage.

### B. Design

Design is the process of planning a product to meet requirements. In this step, the learning objectives, competence achievement indicators, and basic competencies are utilized to determine the hitting balls and other softball learning materials. Additionally, the media and material designs for batting tees are made, along with the necessary tools and supplies.

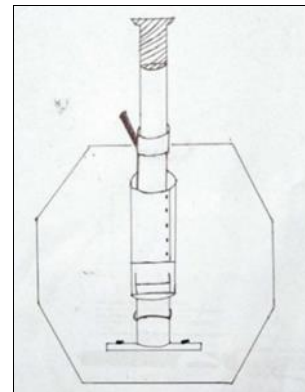


Fig 1: Batting tees seen from the front

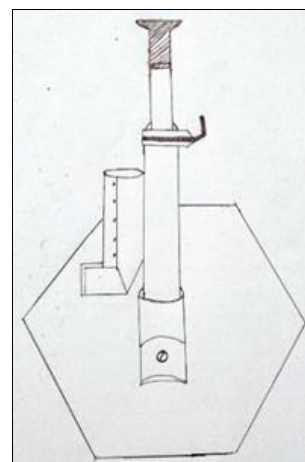


Fig 2: Batting tees seen from the side

### C. Development

In order to determine whether the media is appropriate for field testing, researchers create media batting tees that are manufactured and validated by specialists in learning materials and the media. Researchers give media specialists and material experts pertaining to the caliber of the media to be generated questionnaires to evaluate if the idea is feasible. Experts in media and material will advise researchers to

continue making adjustments if the learning medium fails to meet positive or practical standards.

#### D. Implementation

In order to ascertain how PJOK teachers and students would react to the generated goods, product trials are used during the implementation stage. Using the completed banttu hitting tee tool, students and PJOK teachers complete an assessment questionnaire about the learning process of softball games. In addition, surveys distributed to PJOK teachers and students are utilized to gauge student perceptions of and reactions to instructional materials, such as batting tees for softball topics.

### 3. Results and Discussion

#### 3.1 Results

The purpose of this project is to create a workable and efficient PJOK learning resource on softball, namely in the form of batting tees for junior high school students in grade VIII. This study's development model is based on the ADDIE model, which (Branch, 2009) [1]. They consist of five phases: Analysis, design, development, implementation, and evaluation. However, the researcher only uses the phases of analysis, design, and development because of constraints on the research. The development technique flow is shown here as follows.

#### A. Analyze

In order to analyze needs and prepare for research, the analysis stage conducts surveys and interviews. Some information is gathered in this way.

1. The fact that 64% of students find it tough to hit softball is a result of their lack of knowledge and skill.
2. Fifty percent of pupils feel that learning softball has unique challenges, such hitting the ball that a pitcher or a peer has handed them.
3. While 81% of PJOK teachers have demonstrated striking a ball to aid with softball instruction, pupils still struggle to comprehend and execute the motion.
4. Limited media and incomplete PJOK learning facilities and infrastructure at SMP Negeri 3 Bantan.
5. Softball learning does not have any batting tee media, although KI and KD do have content regarding the practice of hitting softballs using batting tees.

Based on the data collected, researchers at SMP Negeri 3 Bantan, Bengkalis Regency, will create batting tees for PJOK students studying fundamental softball hitting techniques in grade VIII. It is anticipated that this product will assist in overcoming the constraints and shortfalls of PJOK teachers, particularly with regard to the fundamental technical content of hitting softballs. Since some students may find it difficult to comprehend the teacher's explanation in the absence of

these educational resources or media. It is anticipated that the use of media in this instruction will enhance and accomplish learning goals.

#### B. Design

The intended output is a batting tee that teaches the fundamentals of hitting softballs. The goal of research on batting tee media items is to create comprehensive guidelines on product design and materials used in batting tee production. These are the original batting tee designs.

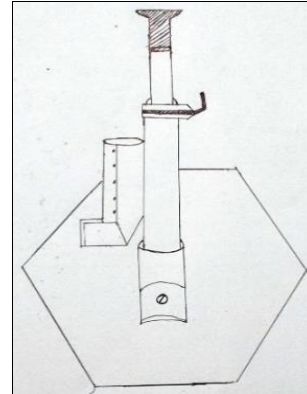


Fig 3: Early Design of Batting Tee



Fig 4: Early Design Batting tee

#### C. Development

Several product validation and trial processes must be completed before developing batting tee media based on the fundamentals of softball hitting technique material. While media validation is done by academics with media expertise, material validation is done by lecturers with material expertise. The following table shows the more thorough evaluation results from the material specialists at stages 1 and 2.

Table 1: Distribution of stage material expert validation results 1

No	Evaluated aspects	Number of Scores	Average	Achievement Level (%)	Category
1.	Product Suitability to Needs	16	0,66	67%	Worthy
2.	Product Suitability to Purpose	22	0,9	92%	Very Worthy
	Sum	38	48	79%	Very Worthy

Table 2: Distribution of stage material expert validation results 2

No	Evaluated aspects	Number of Scores	Average	Achievement Level (%)	Category
1.	Product suitability to Needs	23	0,95	96%	Very Worthy
2.	Product Suitability to Purpose	19	0,79	79%	Very Worthy
	Sum	42	48	87,5%	Very Worthy

The first round of validation results for the PJOK learning media batting tee for grade VIII at SMP Negeri 3 Bantan included 79% of the participants, placing it in the "Very Feasible" category. The second round of validation results for the media batting tee on PJOK learning for grade VIII at SMP Negeri 3 Bantan included 87.5% of the participants, placing it

in the same category. The evaluation is composed of two components: Elements related to the product's alignment with aims and aspects related to its fit for the demands. In addition, the evaluation outcomes from media specialists at stages 1 and 2 are displayed in the table below.

**Table 3:** Distribution of media expert validation results phase 1

No.	Evaluated Aspects	Number of Scores	Average	Achievement Level %	Category
1.	Safe	15	0,93	93,75%	Very Worthy
2.	Attractive	11	0,68	68,75	Worthy
3.	Easy and cheap	6	0,75	75	Worthy
4.	Non-perishable aspect	11	0,91	91,6	Very Worthy
Sum		43	52	83%	Very Worthy

**Table 4:** Distribution of stage media expert validation results 2

No.	Evaluated Aspects	Number of Scores	Average	Achievement Level %	Category
1.	Safe	16	1	100	Very Worthy
2.	Attractive	14	0,87	87,5	Very Worthy
3.	Easy and cheap	7	0,87	87,5	Very Worthy
4.	Non-perishable aspect	12	1	100	Very Worthy
Sum		49	52	94%	Very Worthy

The first round of media batting tee validation results from PJOK studying class VIII softball material at SMP Negeri 3 Bantan have an 83 percent achievement rate and are classified as "Very Decent" due to the input of media professionals. At SMP Negeri 3 Bantan, the validation evaluation involving media experts on the second stage of batting tees for the PJOK learning class VIII softball content has a 94 percent achievement rate and is classified as "Very Decent". The evaluation is comprised of four elements: The non-perishable, the easy and affordable, the appealing, and the safe. The media and information about the generated goods are deemed very feasible based on expert assessments. Subsequently, expert advice and input regarding the validation results are altered to align with the validation outcomes. This demonstrates that it is highly viable to test the batting tee media in PJOK learning softball hitting activity material at SMP Negeri 3 Bantan on both a small and large scale, according to media experts' evaluation of the product.

**D. Implementation:** Trials are conducted on products that have been developed and deemed to be very feasible as educational materials. There have been both small- and large-scale trials conducted. The trial phase, which consists of small- and large-scale trials employing questionnaires on grade VIII students at SMP Negeri 3 Bantan, is then carried out after the validation process.

**1. Small-Scale Trials:** Teachers and students were given questionnaires about the quality of batting tee media as part of this small-scale trial. There are four components to the teacher questionnaire: Appearance, material security, tool security, and learning processes. In contrast, student questionnaires have three components: Tool display, tool security, and learning process. The following is table 5, which displays the findings of teacher evaluations of batting tee goods in PJOK learning fundamental method material for hitting softball at SMP Negeri 6 Bantan in small-scale trials.

**Table 5:** Distribution of results of small-scale trials by PJOK Teachers

No.	Evaluated Aspects	Number of Scores	Average	Achievement Level %	Category
1.	Safe	20	1	100	Very Worthy
2.	Attractive	11	0,91	91,6	Very Worthy
3.	Material	16	1	100	Very Worthy
4.	Learning Process	15	0,93	93,75	Very Worthy
Sum		62	64	97%	Very Worthy

A batting tee product's achievement rate of 97% falls into the "Very Feasible" category according to the PJOK teacher's assessment of the students' learning of basic softball hitting technique material at SMP Negeri 6 Bantan class VIII. The designed batting tee media has been tested in the large-scale stage and has been modified in response to feedback from the results of expert evaluation, based on the results of teacher assessment at this small-scale trial stage.

**2. Large-Scale Trials:** Teachers and students were given

questionnaires about the quality of batting tee media as part of this extensive trial stage. There are four components to the teacher questionnaire: Appearance, material security, tool security, and learning processes. In contrast, student questionnaires have three components: Tool display, tool security, and learning process. Table 6 presents the findings of the evaluation conducted by two PJOK teachers on batting tee products in PJOK students studying fundamental softball hitting technique material at SMP Negeri 3 Bantan in large-scale trials.

**Table 6:** Distribution of results of small-scale trials by PJOK Teachers

No.	Evaluated Aspects	Number of Scores	Average	Achievement Level %	Category
1.	Safe	40	1	100%	Very Worthy
2.	Attractive	24	1	100%	Very Worthy
3.	Material	29	0,90	90,62%	Very Worthy
4.	Learning Process	31	0,96	96,87%	Very Worthy
Sum		124	128	97%	Very Worthy

The two PJOK instructors' evaluation of the batting tee goods used in PJOK's fundamental softball hitting technique material at SMP Negeri 3 Bantan class VIII revealed a 97 percent achievement rate that falls into the "Very Feasible"

category. Table 7 presents the findings from the large-scale testing conducted by students at SMP Negeri 3 Bantan on their evaluation of batting tee goods in the PJOK learning fundamental method material for hitting softball.

**Table 7:** Distribution of results of large-scale trials by learners

No	Evaluated Aspects	Number of Scores	Average	Achievement Level %	Category
1	Tool Display	908	0,847	84,7	Very Worthy
2	Tool Security	697	0,86	86,6	Very Worthy
3	Learning Process	695	0,86	86,44	Very Worthy
Sum		2300	2680	86%	Very Worthy

Students at SMP Negeri 3 Bantan class VIII evaluated batting tee items in PJOK while studying fundamental softball hitting technique material. The results showed an 86 percent accomplishment rate in the category "Very Feasible." The evaluation of students using batting tee products in PJOK as they study fundamental technical concepts and hit softballs in large-scale trials is classified as extremely practical. This research output takes the shape of media or equipment, specifically batting tees composed of inexpensive, easily obtainable materials. Paint buckets are used for batting tee bases, cement is used, and iron pipes are used as the batting tee poles. Hoses are used to determine which ball to put where if you want to be hit.

**Fig 7:** The part where to put the ball**Fig 5:** End product batting tee**Fig 6:** Bolts to determine the high and low of the *batting tee*

### 3.2 Discussion

Use of the batting tee product, which was produced for PJOK learning the fundamental technique material for hitting softball at SMP Negeri 3 Bantan is rather practicable. As per Cahyono *et al.*, (2021) [3] media is a component of instructional materials or tangible media that students can use to learn. In order to help students identify the learning process and facilitate a better understanding of the subject matter, physical education teachers need to be able to create a welcoming environment. As a result, educational media is crucial to learning. A batting tee is a necessary instrument in softball instruction to help players hit the ball more accurately. A batting tee is a tool for practicing hitting a ball that is not moving. As stated by Lestari (2017) [9] one tool used to improve striking technique is the batting tee, in which a ball is set up on an iron rod that has been measured using the straight batting zone as a guide. This batting tee is meant to help someone practice hitting softballs. Using a batting tee to hit the ball typically yields multiple hitting outcomes, with the initial hit being a right hit or impact. Benefits of utilizing batting tee materials in softball instruction as stated by Haryanti (2015) [8] among them are: (a) enhancing striking motion skills; (b) refining abilities and mechanical development, particularly on swings; (c) developing focus and eye coordination; (d) enhancing hitting accuracy with a bat or impact; and (d) being able to consistently hit the ball in its location.

#### 4. Conclusion

The purpose of batting tee development in PJOK basic softball hitting technique instruction is to facilitate students' use of batting tees when hitting class VIII softballs in softball hitting activity materials. The expert assessment of stage 1 and 2 material on the batting tee media has a score of 79 percent and 88 percent is included in the very decent category, while the assessment of stage 1 and 2 media experts on batting tee has a score of 83 percent and 94 percent is included in the very decent category, meaning that the batting tee product that has been developed is suitable for use.

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