

Modification of Baseball Beater for Elementary School Physical Education Learning

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Abstract

The loss of interest and the decrease of students 'motivation towards the ball game is one of the students' difficulties in doing the punch because the batter has a very small cross-section, so the student's punch is rarely about the ball. Research using R & D development method. Procedures of development research conducted are: (1) potential and problem, (2) data collection, (3) product design, (4) design validation, (5) design revision, (6) Product Testing, (7) trial usage. The subjects of this research are the students of 5th grade of Elementary School. Instruments and techniques of data collection using questionnaires, field notes, and documentation. The conclusion of this research is (1) "Smart hitter" ball beater modification product can be used as medium of learning of game of soccer ball for elementary school, (2) modification product of ball beater "Smart hitters" can be used to improve the capability of basic motion techniques to hit the ball for the basics. (3) "Smart hitter" ball bearing modifiers can be used for playing ball games for elementary school.

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INTRODUCTION

Penjasorkes are the stages of a general education program that contributes to the overall growth and development of children, especially through the experience of movement. This is a learning program that pays attention to all learning domains: psychomotor, cognitive, and effective (Pangrazi, 2004). The scope of the subjects of Penjasorkes includes games and sports, development activities, gymnastic activities, rhythmic activities, water activities, and out-of-school education. Games and sports include: traditional sports, games, skills, locomotor-nonlocomotory and manipulative, athletics, baseball, rounders, kippers, football, sepak takraw, volleyball, table tennis, tennis courts, badminton and martial arts, as well as other activities. (Depdiknas, 2008).

Games are voluntary activities or fun performed with elements: (1) play, (2) simple competition, (3) rules are made to be obeyed together, (4) results are determined by elements of the precision of strategy and opportunity (Sugiyanto, 2007).

The game of the ball is a type of game that is easy to get and simple but the form of games that have been given to students will make students bored if the teacher in the delivery of material given is not clever in processing and mixing the material, one of the many students who have difficulty when doing punch on this game. Modifying a battering tool to help students easily take the necessary punches in order to provide a rewarding and confident experience when successfully hit well. The loss of interest and the decrease of students' motivation toward the game of the cruel one of them is the student's difficulty in doing the punch because the batter has a very small cross-section, so the student's punch is rarely about the ball.

The ball play is done with two groups, the number of each group can be adjusted to the available field conditions. The field used is a rectangle that is given a place to perch and a place to do a punch. In this game demands good skill, cooperation, discipline and high sportsmanship.

Implementation of this modification must be adjusted with the growth rate of elementary school students and not to be separated also to pay attention to safety and safety factor for students and at least also refers to the content of educational goals such as developing skills, self-management in the development and maintenance of physical fitness as well healthy lifestyle through various physical activities and sports. The modification of the cashew game batter that will be applied to the students' expectations can make one of the problem-solving activities carried out in connection with the learning process of Penjasorkes. The desired expectation of at least: (1) can increase the student's interest on learning materials Penjasorkes, (2) can be a solution to overcome the sense of saturation or boredom of students in learning which is still classified in the category of monotone, (3) the improvement of student skills and intensity of activity physical students in following Penjasorkes learning.

METHODS

Research and Development called research-based development is a type of research that is increasing its use in solving practical problems in the world of research, mainly research and education learning. According to Borg and Gall as quoted (Wasis Dwiyoogo, 2004) research and development is a process used to develop or validate the products used in instructional education, it is further mentioned that the research and development procedure basically consists of two main objectives: (1) product development, and (2) testing the effectiveness of the product in achieving goals.

(Nurzaqi & Rahayu, 2015) The development of thematic learning subjects of penjasorkes for 5th grade elementary students can create effective learning, can be used to develop 3 domains of learning (cognitive, affective, and psychomotor) optimally.

(Yuniartik & Hidayah, 2017) Result of research: (1) Antecedents, learning penjasorkes have a good learning plan, because learning planning is made referring to the curriculum

adapted to the ability and needs of students, and school conditions, by conducting initial assessment first. (2) The transaction is the implementation of learning activities in the category enough. Implementation of learning activities is done by modifying the RPP and not infrequently not in accordance with the planning of learning that has been made. Teachers do not use teaching aids/learning media, the lack of teachers who modify learning tools to fit the material and characteristics of students, as well as the allocation of learning time is not implemented in accordance with the schedule of learning. (3) Outcomes are the assessment of learning by teachers on learning outcomes penjasorkes enter in the category enough because it has not fully described the implementation plan of learning and implementation of existing learning activities. Assessment of lessons learned tends to be seen from observations during the learning process, has not been done comprehensively to judge from input, process and output/outcome, by integrating full attitude, knowledge and skill assessment.

(Nurtajudin, 2015) coordination exercises eye-foot-hand and the level of balance does not provide interaction with the rough motor. The level of balance does not guarantee a child's rough motor will be better. Suggestions apply the exercise to function effectively in improving gross motor and provide stimulus to the child to perform rough motor movements in the activities of the daily movement.

(Afif, 2017) The results showed that the talents of 5th graders of Manonjaya Tasikmalaya Public Elementary School are quite potential as a candidate for athletes to be developed in something sport in general. Conclusion, the result of identifying sport talent of elementary school students in Manonjaya Village, Manonjaya Subdistrict, Tasikmalaya Regency is quite potential as a candidate for athlete and supported by parent's role so that it can be developed in all sport in general or its interest. Teachers of physical education and coach, community, parent and KONI to develop further sports talent identification for sporting achievement. (Setiyono & Rahayu, 2015) The result of research

on SDN Sron dol Wetan 6 mostly cognitive ability (97.3%), effective (91.9%), psychomotor (91.9%). SDN Pedalangan 3 mostly cognitive ability (86.4%), effective (86.4%) and psychomotor (86.4%). SDN Sron dol Wetan 5 mostly cognitive ability (92.1%), affective (86.8%) and psychomotor (84.2%). Overall students in this study had the cognitive ability (92.8%), affective (88.7%) and psychomotor (87.6%). The conclusion of the use or the use of tibol game products in introducing softball games has an effect on the intensity of learners' movement, overcoming the limitations of infrastructure, becoming an alternative to small ball games, providing complex motion coordination experience so as to prove feasible and acceptable.

(Albert Tangkua & Rahayu, 2015) The results obtained by the perception of learners on the implementation of PJOK subjects is good, Understanding learners against PJOK is good. The role and position of learners against the construction of learning planning PJOK quite well. The conclusion of this research is that learners at high school level are the recipients of educational action have role and position to the implementation of subjects PJOK. It is recommended for schools and teachers PJOK should consider/involve learners in the process and construction of learning implementation as a study to improve the quality of learning outcomes PJOK.

RESULTS AND DISCUSSION

For testing, we will test the product by small-scale test with each respondent, 70 students of 5th grade elementary school of Plangan 1 Gunungpati sub-district and evaluate whether the product is in accordance with the objectives set by the expert of a game of soccer. Small-scale trials Grade V students are conducted using 70 subjects in 5th grade students. The revision of the spinning modifier product for learning is done if in small-scale trials there are constraints and weaknesses, if there are no constraints then the product can be used in the trial usage (large scale).

After small-scale trial and revision of spinning modifier product successful then the

next product will be used in a broader scope of students of 5th Class from elementary school plangan 1 Gunungpati sub-district, elementary school banyumanik 3 banyumanik sub-district,

elementary school sendangguwo 1 tembalang, this should still be assessed for deficiencies and obstacles in order to improve further product.

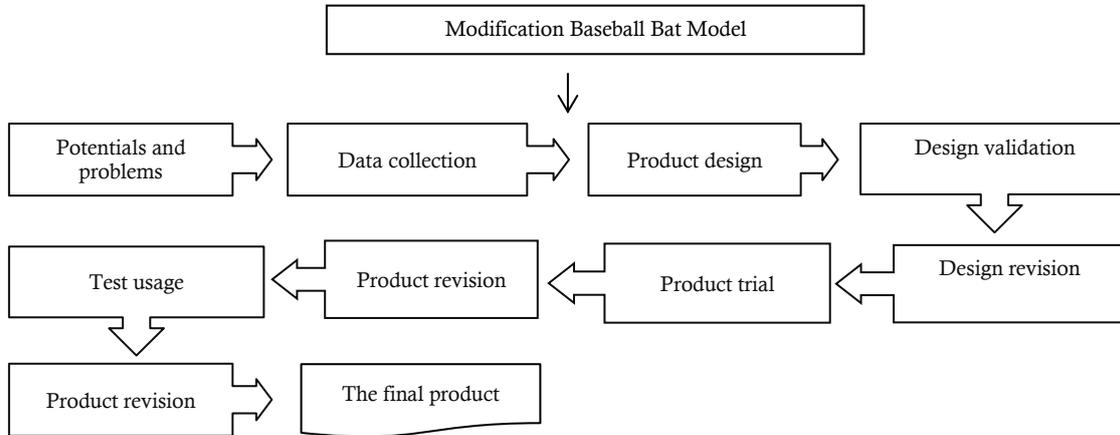


Figure 1. Steps of Research and Development Methods (R&D)

Table 1. Product Rating Criteria

Criteria	Assessment indicators	Weight
Aspect of originality	Is the work of researchers	10
	It has a distinguishing feature compared to similar existing sports equipment (Originality)	10
Aspects of innovation excellence	Has an advantage in terms of quality of innovative works, materials, usage, and care	10
Aspect of expediency	Has a high efficiency for a wide audience in support of baseball game learning efforts	20
Economic aspects	Have a positive impact of technology implementation. With the industrialization of baseball battering modes for learning	10
	Has the potential for commercialization and market coverage	10
Security Aspects	Have a security level for teachers and students	10
Aspects of comfort	Have a good level of comfort for the students	10
Aspects of completeness of supporting data	Have a description of the manual for using modified ball beater for learning	10

Information: The scoring range uses a scale of 1- 100
 81 – 100 = Very well
 70 – 79 = Good
 56 – 65 = Enough
 44 – 55 = Less
 0 – 40 = Less once

(Sugiyono, 2010)

In making the initial design, researchers focused on aspects of criteria that have been used by Kemenpora in selection and assessment for

contestants (In'am Attaqi, 2016). There are six aspects and criteria of assessment in the selection of the development of baseball battering modification by researchers, among others:

1. The aspect of originality is the work of researchers and has a distinguishing feature with the existing hitter.
2. Aspects of innovation excellence, have excellence in material quality and material supply.
3. The aspect of expediency has a high efficiency for teachers of physical education of elementary school children as a medium of learning.
4. The economic aspect has a positive impact on the creation of the sports equipment industry by using materials from the potential of existing areas.
5. Aspects of safety and comfort, have a good level of security and security for students in running baseball learning.
6. The completeness aspect has a description of the development of a baseball batter model for elementary school learning

Here is an initial draft of baseball battering product development before being validated by expert experts.

Tabel 3. The Results of Expert Evaluation Penjas, Traditional Game and Expert Wood

Criteria	Aspects assessed	Expert			
		Aspect of assessment			
		A1	A2	A3	A4
Aspect of originality	Is the work of researchers	9	9	9	9
	Has a differentiating feature than an existing hitter (originality)	8	9	9	9
Aspects of innovation excellence	Has an advantage in terms of quality of innovative works, materials, usage, and care	9	8	9	9
	Have a positive impact of technology implementation. With the industrialization of the baseball bat	9	9	9	9
Economic aspects	Has the potential for commercialization and market coverage	8	8	10	10
	Have a safety level for elementary school students	10	9	10	10
Aspects of comfort	Have a good level of comfort for elementary school students	8	9	9	9
	Have a description of the users manual modification of baseball bat	9	9	9	9
Total score		88	89	93	93

Information:

A1 : expert 1, A2 : expert 2, A3: expert 3 A4 : expert 4

The results of the evaluation by each expert sports game experts obtained scores above 88 who entered the criteria good and appropriate.

After the modification product was validated by experts and revised, the product was tested on a small scale at elementary school students of 5th grade SDN Plalangan 01 SDN Banyumanik 03 to do the ball beating.

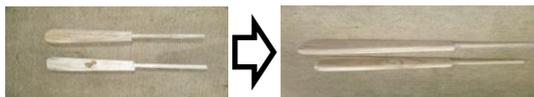


Figure 2. Initial Product

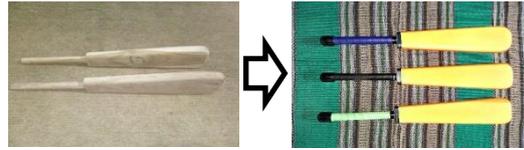


Figure 3. Product Comparison After Revised

Table 4. Revised Initial Product Initial Draft

Result		
The revised section	Revised results	Goal
Handgrip holder handle	Grip using a rubber grip	In order to be comfortable safe and sticky on the handle
End of handgrip end	The handgrip cover uses a rubber cover	To keep the handgrip stuck and the handle feels safe and comfortable
Beaters look	The batter is painted with spray paint and given a brand sticker	So that the beater looks more attractive and quality

A total of 70 students of 5th Grade Elementary School Plalangan 01 and Elementary School Banyumanik 01, stated:

1. The product is safe to use for baseball game learning media.
2. The product is comfortable to use for learning media of baseball game.
3. The product is in accordance with the physical size of 5th grade students
4. The product is not heavy when used in baseball hitting
5. Products can be used for baseball game learning media
6. Products can be used for subsequent baseball game learning media

Large-scale trials were conducted at Elementary School Gunungpati 01, Elementary School Plalangan 01 and Elementary School Pakintelan 01, Elementary School Banyumanik 03 and Elementary School Srandol Wetan 06. The number of students employed in large-scale trials is 175 students of 5th grade elementary school. A total of 175 elementary school students of 5th grade, stated: (1) The product is safe to use for baseball game learning media, (2) The product is comfortable to use for learning media of baseball game, (3) The product is in accordance with the physical size of 5th grade students, (4) The product is not heavy when used in baseball hitting, (5) Products can be used for

baseball game learning media, (6) Products can be used for subsequent baseball game learning media.

CONCLUSION

Based on the steps of development research to produce the products that have been done then got the final product in the form of modification baseball bat as a learning media baseball elementary school. The indicator of the success of this product is in the form of analysis from observation, interview, discussion with skillful experts, traditional game expert and wood expert and the result of documentation to all subjects that have been tested in this research.

Based on the experimental usage that has been done, the result of modification of baseball batter in test try can be used as a medium of learning baseball game for elementary school. This study is a modified baseball battering modification in accordance with the stages specified. After going through the process of modifying the development through the stage which is a modification of Borg and Gall, then the researchers produced a modified product baseball batter named "smart batter". Then it can be concluded that: (1) The modified "baseball bat" baseball modifier can be used as a medium for baseball game learning for elementary school, (2) The modified "baseball bat" baseball modifier can be used to improve the basic motion capability of baseball hitting for elementary school, (3) Product modifiers baseball bat "smart beater" can be used to play baseball games for elementary school

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