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## Development of a Long Jump Learning Model with Varied Hurdle-Jumping Activiti

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### ABSTRACT

This research aims to produce a long jump learning model with varied hurdle-jumping activities at the YP Indra Plaju Elementary School. The type of research used is research and development (R&D), which is research to produce a product in the form of a long jump learning model with varied hurdle-jumping activities. The population of this research was 30 YP Indra Plaju Elementary School students. The sampling technique in this research is for small group testing of 10 students and large group testing of 20 students. The data collection techniques used are product validity, interviews, observations, and filling out questionnaires with students. The instruments in this research are validation sheets and questionnaires. The data analysis techniques are validity, practicality, and effectiveness. Based on the research results, the results of the validator assessment with revisions and suggestions obtained an average of 4.3 in the feasible and usable category. The average score from the limited scale test questionnaire was 4.45 with adequate criteria. The large scale test obtained a score of 4.6 which is at a good level and suitable for use. The effectiveness and interest of long jump learning materials with hurdle jumping activities vary in elementary schools according to the research results. It is very effective, according to the research results, the value obtained is 5. Based on the assessment criteria, a score of 5 is in the very effective category. This means that the long jump lesson material with varied hurdle-jumping activities is very effective for learning the sport of the long jump at school. This research concludes that the long jump learning model with varied hurdle jumping activities can be declared valid in its use and this learning model is practical to use and this learning model is effectively used to support long jump learning activities. The implementation of the results of this research is that the long jump learning model can be carried out with varied hurdle-jumping activities.

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### AUTHORS' CONTRIBUTION

- Conception and design of the study;
- Acquisition of data;
- Analysis and interpretation of data;
- Manuscript preparation;
- Obtaining funding

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## INTRODUCTION

Athletics plays an important role in the development of physical condition and is often the main basis for development and increasing optimal performance in other sports. Bearing in mind that athletics is one of the basics of developing sports and



physical movement, the role of athletic learning for students must be adjusted to the student's abilities. Learning athletics in elementary schools is an effort to lay the foundation for physical and movement skills so that the learning process emphasizes the excitement factor in children from movement games and athletic sports activities. Hafidz et al., (2021) Elements in athletic learning include walking, running, jumping, and throwing numbers. It is hoped that the inclusion of athletics in schools in physical education subjects will increase students' motivation to take part. However, the reality on the ground is inversely proportional to expectations. In athletics subjects, there are still many students who are not interested in athletic subjects and tend to dislike athletic subjects, including jumping events. The long jump is one of the jump events in athletics teaching in school curriculum materials (Yuliawan, 2015).

Long jump learning in elementary schools is carried out by looking at the existence of the facilities and infrastructure of the school concerned, the abilities of students and the direction of further development. The long jump is taught in schools, which is an exercise for students to perform jumping movements and reach the distance that can be jumped as far as possible, starting with a running movement as a starting point for jumping, then pushing off the support board or push, then a floating movement in the air and finally landing at the farthest point. Prahardika (2014) Long jump is a subject matter that is generally less popular with students, this can be seen from the lack of enthusiasm of students in taking part in athletics lessons. This is caused by many factors. One of them is the presentation of material which is monotonous and lacks variety. Likewise, what happened to class V students at YP Indra Plaju Elementary School Jl. Pintu Besi No. 4, Plaju grade five, Kec. Plaju, Palembang City, South Sumatra 30119. Based on the results of observations, information was obtained that; long jump learning has not gone well and is less varied. There is a lack of interest and motivation in physical education lessons, there are still some students who chat with their friends, and are lazy in doing the assignments given by the teacher. Students prefer game lessons, such as soccer lessons.

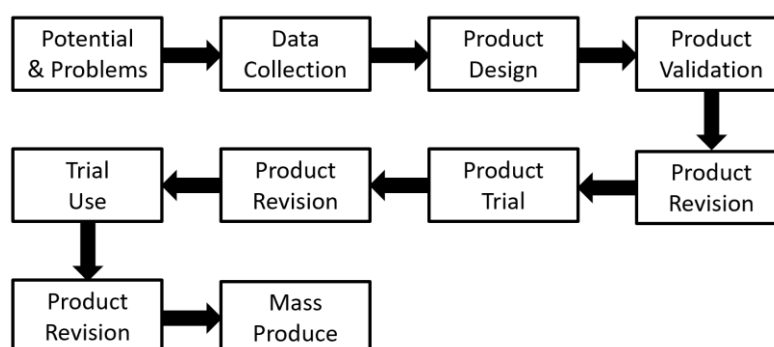
Sutanto (2016) Long jump is a sport that requires an athlete to jump as far as possible. In this sport, a jump tank will be provided as a landing place with a length of around 9 meters. Runners must run as fast as possible, then jump on the support beam, and finally land as far as possible on the jump platform. It is hoped that the development of long jump learning with varied hurdle-jumping activities can make students more active in moving in various enjoyable situations and conditions and emphasize aspects of students' skills, attitudes, and knowledge. Prasetyo (2016) Long jump is a form of jumping movement by lifting both legs up in front in an effort to carry the center of body weight as long as possible in the air which is done quickly by pushing one leg to reach the greatest distance possible. Wiarto (2013) The long jump is one of the athletic events that is popularly contested. One example of the world's best athlete is Mike Powell, who jumped 8.95 m from America and is recognized as the world record holder which has not yet been broken. Paturohman et al., (2018) stated that "Long jump is an activity in athletics with movements carried out in athletics with movements carried out in the jump to achieve a jump as far as possible. The long jump movement is a movement based

on speed, endurance and accuracy. (Permana, 2019). Long jump is a number in athletics that uses the basic movements of starting, lifting or pushing, flying and landing with the aim of jumping as far as possible forward with a horizontal movement.

Based on the background that has been described, researchers are interested in conducting research on the development of a long jump learning model with varied hurdle jumping activities in elementary schools, as an innovative physical education learning vehicle, to make learning fun and interesting for students which is also beneficial for the growth and development of participants. educate. The reason for this problem is first, physical education learning is very important for YP Indra Plaju Elementary School students so that students have cognitive, affective, psychomotor skills, are physically and spiritually healthy. Second, Physical Education learning in elementary schools aims to make students actively move and enjoy playing, not based on results or achievements. Third, YP Indra Plaju Elementary School students need to be stimulated and given an interesting long jump learning model so that students have a high interest in learning, so that they will achieve the expected educational goals.

## METHODS

This research uses RND (research and development) type research, this research is research that is used to create new products or develop existing products. Based on needs analysis in the field or the results of observations, interviews, questionnaires (Tangkudung, 2016). This development generally aims to produce long jump learning development with varied hurdle jumping activities. The aim of this research is to produce long jump learning with varied hurdle jumping activities. The research design used was to develop a long jump learning model with varied hurdle jumping activities in elementary schools, as an innovative physical education learning vehicle, to make learning fun and interesting for students which is also beneficial for the growth and development of students.



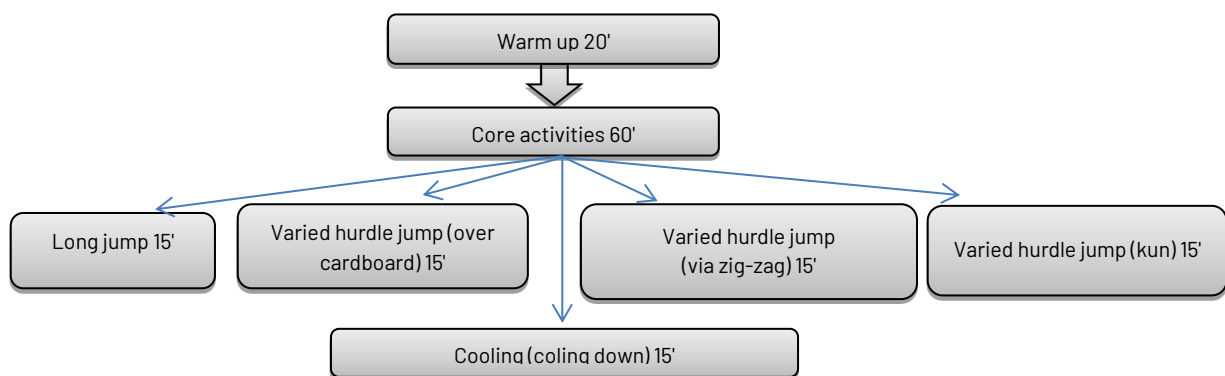
**Figure 1.**  
Research design

The population in this study was 30 YP Indra Plaju elementary school students. The small scale trial is 10 students. The large-scale trial consisted of 20 students. This research instrument uses interview research instruments, observation sheets, lift

sheets, and documentation. This research and development uses data analysis techniques in the form of quantitative and qualitative data.

## RESULTS AND DISCUSSION

After determining the product to be developed in the form of a long jump learning model with varied hurdle jumping activities that are suitable for elementary school students. The next stage is to create a product using the following steps. The design of the long jump learning model with hurdle jumping activities varies after being designed. Furthermore, products are produced that can improve the long jump learning model for students.



**Figure 2.**

Long jump learning model design

From the results of the validator assessment by physical education experts, the results obtained were physical education subject matter with interesting indicators with a score of 95. The valid category with a score of 90, suitability 90 and structured got a score of 90. So the average score obtained was 91.25. Learning expert, obtained a score of 90 valid criteria. An interesting indicator with a total value of 50, and a simple indicator with a value of 40. From the value obtained, a value of 90 is declared valid because it is in the 90-100 interval. Based on the results of the validation that has been carried out, namely qualitative results which have been corrected according to suggestions and input from physical education material experts, as well as quantitative results show that the development of the learning model for long jump with hurdles varies beyond cardboard with an average value of 4.3 in the feasible and adequate category. Ready. It can be concluded that the learning model product developed can be tested in the field. The following can be seen from the results of the analysis of student responses in the table below:

**Table 1.**

Feasibility of Student Response Research Validation Results

		Validasi Ahli Materi																						
Validator	Students' ability to practice variations of movement in learning the long jump with activities jumping hurdles in a row.						Total Score	Average	The ability of students to understand variations in movement in learning the long jump with hurdle jumping activities varies.						Total Score	Average	The ability of students to display attitudes in participating in long jump learning with varied goal jumping activities, such as the values of cooperation, sportsmanship and honesty						Total Score	Average
	1	2	3	4	5	6			1	2	3	4	5	6			7	1	2	3	4	5		

Student response	5	5	5	5	5	5	30	5	5	5	5	5	5	5	5	5	35	5	5	5	5	5	5	5	5	35	5
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Based on the table above, the ability of students to practice variations of slag in learning long jump with hurdle jumping activities varies with the category very decent, because the score obtained is an average of 5. Likewise with the ability of students to understand variations of movement in learning long jump with Hurdle jumping activities vary, with a very feasible category with an average score of 5 out of the 7 questions given. And the appropriate category can also be seen from the ability of students to display attitudes in participating in long jump learning with various hurdle jumping activities, such as the values of cooperation, sportsmanship and honesty, with an average value of 5. According to the validator, students' responses to hurdle jumping vary very well. , because it will develop students' psychomotor, cognitive and affective skills.

A small-scale trial was carried out by a physical education teacher on students in class V of SD YP Indra Plaju. This small-scale trial aims to observe the feasibility of the learning model which is based on field realities. The results of the assessment carried out by PJOK teachers in carrying out small-scale trials are as shown in the table below.

**Table 2.**

Data on PJOK Teacher Assessment Results from Limited Scale Trials

Teacher/Expert	Indicator										Total Score	Average
	1	2	3	4	5	6	7	8	9	10		
Teacher	5	3	5	4	5	3	5	3	5	4	42	4,2

Description: Students pay attention to the lesson well, Students pay attention to the teacher's explanation, Students are enthusiastic about learning, Students ask questions and interact with the teacher while studying, Complete learning facilities, Students are present when studying, Students bring complete writing equipment, Participants Students have a high interest in the long jump, Students have a high interest in the varied hurdles, and Students have good arguments for the varied hurdles. Based on the table above, the final criteria for the quality aspect of the learning model are obtained from the results of converting quantitative data to qualitative data on a scale of five. Data from small-scale trial assessments by PJOK teachers with an average score of 4.2 with appropriate criteria for learning model assessment can be concluded that the model developed can be tested on a wide scale. Based on the revision from the sports teacher, namely Tri Purnama Sari, in the table above, it can be seen that the teacher revised 1) the slow motion long jump movement will be carried out repeatedly; 2) jumping game.

A wide scale trial was carried out on PJOK teachers in class V of YP Indra Plaju Elementary School. Data on the results of wide-scale trial assessments by PJOK teachers after carrying out wide-scale trials are in the table below:

**Table 3.**

Data from the Wide-Scale Trial PJOK Teacher Assessment Results

Teacher/Expert	Indicator										Total Score	Average
	1	2	3	4	5	6	7	8	9	10		
Teacher	5	5	5	4	5	5	5	5	5	5	49	4,9

Based on the table above, it can be concluded that the use of the model (PJOK teachers) developed in the wide scale trial for teacher 1 was 4.9 in the feasible category, meaning that the model developed can be used for research. The results of the data analysis were because the data was not normally distributed, so the Mann-Whitney test was carried out. It is known that the overall score of the long jump test with hurdles varies with the Asymp-Sig (2-tailed) value being 0.000. So it can be concluded that the athletic learning model of long jump material using cardboard has a significant influence on the learning process at school. The final product of developing a long jump learning model with varied hurdle jumping activities in elementary schools.

### Long Jump

Students line up and 1 person stands in front to do the long jump and the other participants prepare to do the next long jump with a predetermined distance of 1.5 meters, then the participant in front does the long jump by running then jumping followed by the next student.



**Figure 3.**  
Long Jump

### Vary hurdle jumping over cardboard

Students line up and 1 person stands in front of the designated line to jump over the designated boxes. The next student does the same thing.



**Figure 4.**  
Jumping hurdles

### Goal Jump via Zig-Zag



Students line up and 1 person stands in front on a predetermined line and another person stands to do a variety of zig-zag hurdle jumps using a kun. Next, the students in front perform various zig-zag hurdle jumps alternately.



**Figure 5.**  
Hurdle Jump

### **Varies in hurdle jumping**

Students line up and 1 person stands in front and the others stand behind. Next, the students do a hurdle jump with various kuns by jumping over 1 by one, the right and left side of the kun, continuing alternately.



**Figure 6.**  
Varies in hurdles

A learning model is a plan or pattern that can be used to shape the curriculum, design instructional materials, and integrate the teaching process in the classroom or in different settings (Istiningsih et al., 2018). The development of the long jump learning model with varied hurdle jumping activities began with identifying problems in the PJOK learning process, especially in long jump learning with varied hurdle jumping activity material. The literature review was carried out by collecting materials and supporting data theories related to research in the learning process. This literature review aims to find material that supports the long jump learning model with varied hurdle jumping activities that are suitable for teachers that can be used in the teaching and learning process at school in PJOK learning. So that the existence of a learning model can help teachers in teaching and learning activities. Based on the results of observations made by researchers on teachers through interviews, it was found that in long jump learning, the teacher only provided material and field practice. The lack of school facilities and infrastructure also hinders teaching and learning activities. With the learning model using cardboard by forming a zig zag pattern, the teacher is expected to be able to help

students' teaching and learning activities with various hurdle jumping activities. With ease, it can now be accessed via cardboard which is easy to obtain, so that students can study anywhere and anytime.

Based on the findings of this research, it has been shown that there is a development of a syntex learning model to meet the needs of physical education teachers at YP Indra Plaju Elementary School, Palembang. This can be seen from the results obtained from the values  $t_{\text{value}} = 2,579 > t_{\text{table}} 2,265$ . This shows that  $t_{\text{value}} > t_{\text{table}}$ . Based on the explanation above, a long jump learning model product was produced with varied hurdle jumping activities.

- a. Carboard as a Learning Model for long jumps by forming a zig zag pattern, a form of exercise carried out by turning movements across a prepared track, with the aim of training the ability to change direction quickly. In this development, it is carried out in the form of individual hurdle jumps.

- b. Validity of learning model development

Assessment from experts is a factor that determines the suitability of the product being developed. Comments and suggestions from experts are very necessary for the feasibility of the learning model. Comments and suggestions are used as revision material before this learning model is used for small-scale field trials and large-scale trials. Based on assessments from experts regarding cardboard products in stage I with an average value of 3.5 in the quite feasible category and stage II with an average value of 4.6 in the feasible category. Expert assessment regarding the learning model in the form of cardboard phase I is feasible and can be used for field trials.

- c. Implementation of learning model development

Assessment from experts is a factor that determines the suitability of the product being developed. Comments and suggestions from experts are very necessary for the feasibility of the learning model. Comments and suggestions are used as revision material before this learning model is used for small-scale field trials and large-scale trials. Based on assessments from experts regarding products in the form of cardboard forming a zig zag pattern in stage I with an average value of 3.1 in the good category and stage II with an average value of 4.3 in the appropriate category. Expert assessment regarding the learning model in the form of cardboard zig zag pattern phase I is feasible and can be used for field trials.

- d. Implementation of learning model development

Based on small-scale trials, implementing the learning model in the PJOK learning process is feasible. Teacher ratings with an average of 4.2 in decent. So it can be concluded that the model developed can be tested on a wide scale.

The implementation of learning models in the PJOK learning process which are tested on a wide scale is included in the feasible category. The results of the wide-scale trial that was tested on PJOK teachers showed that the model developed was in the feasible category. So it can be concluded that the zig zag learning model using cardboard media can be used in the PJOK learning process at school.

- a. Learning model design



The level of use of this learning model can be seen in the success of students in carrying out the long jump. This learning model can increase students' success in executing the long jump correctly. Test the design for using this learning model using a pretest posttest design. The data taken from the design test is in the form of an assessment of the results of the teacher's observations of students by filling in the long jump assessment that has been provided.

b. Advantages and Disadvantages of the Products Produced

The results of the research and development of a product produced in the form of a zig zag pattern using valid and feasible cardboard media. The long jump learning model using cardboard media that was developed has several advantages, including:

a) Increase students' motivation and enjoyment in physical education learning

The orientation of Physical Education learning in elementary schools is to create a feeling of joy (gymfull), children participate in learning with a sense of enjoyment, of course this will encourage their motivation to participate in participating in Physical Education learning, and in the end children will have the opportunity to actively move, so that the aim of learning is to improve physical fitness. child will be achieved.

b) Increasing student learning activities

The principle in learning modification is learning activities, therefore in Physical Education learning what needs to be emphasized is utilizing time with movement activities.

c) Improving the Physical Education Learning Outcomes of Students

If a child has a lot of movement experience, it will certainly contribute to improving their physical fitness. Physical fitness is a very important aspect of basic capital in getting optimal learning results.

d) Overcoming the Shortage or Unavailability of Facilities and Infrastructure

One of the supports in the Physical Education learning process is the availability of existing facilities and infrastructure. Facilities are tools used in Physical Education learning.

This learning model also has several disadvantages, including: PJOK teachers must master all the movements in the long jump material, especially the zig zag pattern and teachers must continue to provide training to students so that students are experts in playing long jump using the zig zag pattern.

This research is related to previous research such as research Sumarni & Bayu (2022) Entitled "Development of Long Jump Learning Models Using Example and Non-Example Methods. In the research of Sumarni, S., and Bayu, W.I, the model for developing long jump research through examples was carried out using conventional and non-conventional models because at that time learning was carried out at home during the Covid-19 pandemic. So, learning is less effective. Meanwhile, the research conducted by researchers was effective because students could directly carry out learning or practice directly in the field using cardboard media made in a zig zag shape. This media is very easy for teachers to obtain for the learning process.

Siregar et al., (2020) "Entitled Development of Long Jump Learning Variations for Unimed FIK Sports Coaching Students. This research develops athletic learning in long jump numbers in the sports coaching education department of FIK Unimed through various variations of learning, but the media used is a sports education textbook, the author's research is almost the same as the researchers' research on long jump material with varied hurdles, the aim is the same so that learning is more effective.

## CONCLUSION

The development of a long jump learning model with varied hurdle jumping activities in elementary schools has resulted in a product of a varied long jump learning model, namely 15 minute long jump, passing through cardboard, cooling down, passing through ziq zaq, and kun varied hurdle jumping. From the research results, the significant value of the learning model variable in the form of Syntax (X) is 0.008. Because the sig value.  $0.008 > \text{probability } 0.05$ , then it can be concluded that H1 or the first hypothesis is accepted. This means that there is an influence of the syntex learning model (X) on the needs of physical education teachers (Y). The effectiveness and interest of long jump learning materials with hurdle jumping activities varies in elementary schools according to research results, very effective, according to research results, the value obtained is 5. Based on the assessment criteria, a score of 5 is in the very effective category. This means that the long jump lesson material with varied hurdle jumping activities is very effective for learning the sport of long jump at school. The development of the long jump learning model in physical education, sports and health at YP Indra Plaju Elementary School resulted in PJOK teacher guidance material to make the learning process easier, especially the long jump material. For future researchers, there needs to be more in-depth development to increase insight and perfection of this research.

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