



## Efforts to Improve Discuss throwing Skills with Water Pipe Modifications in Junior High School Students

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### Abstrak

Lempar cakram merupakan salah satu nomor lempar pada cabang olahraga atletik selain lempar lembing dan tolak peluru. Pada nomor ini khususnya lempar cakram tersebut sudah banyak diselenggarakannya event-event kelas amatir baik ditingkat Sekolah Dasar. Hal ini sejalan dengan aspek psikomotor pada peserta didik belum maksimal dikarenakan kurangnya sarana dan prasarana dan kurangnya kreativitas tenaga pendidik dalam menyampaikan materi yang ada pada lembaga tersebut. Tujuan daripada penelitian ini dengan adanya modifikasi pipa air dapat meningkatkan gerak keterampilan bermain nomor lempar cakram yang nantinya dapat diimplementasikan kepada peserta didik. Sehingga dengan adanya modifikasi tersebut proses belajar mengajar tidak relatif monoton, dan proses pembelajaran dapat berjalan sebagaimana semestinya. Pada penelitian ini peneliti menggunakan metode penelitian tindakan kelas dengan data sampel peserta didik kelas VII yang beranggotakan 22. Sedangkan instrumen pada penelitian ini menggunakan teknik total sampling yang dimana pengumpulan data observasi dan tes gerak keterampilan lempar cakram. Dari hasil observasi serta penelitian tersebut didapatkan hasil dengan data masih minim nya aspek kognitif dan psikomotor peserta didik pada saat proses pra-siklus sebelum diberlakukannya pemberian treatment. Akan tetapi sebanyak (54,53%) adanya peningkatan pada pemberian treatment modifikasi pipa air di siklus I. Dan adanya peningkatan yang signifikan pada siklus ke II dengan jumlah presentase sebanyak (86,38%). Sehingga hasil daripada penelitian tersebut dapat disimpulkan bahwasannya dengan menggunakan modifikasi pipa air sangat bermanfaat untuk pelatih khususnya tenaga pendidik dalam memberikan latihan atau pembelajaran lempar cakram pada kelas amatir atau peserta didik.

**Kata Kunci:** Modifikasi, Lempar Cakram, Pipa Air, Siswa.

### Abstract

Discus throw is one of the throwing numbers in athletics besides javelin throw and shot put. In this number, especially the discus throw, there have been many amateur class events held both at the elementary school level. This is in line with the psychomotor aspects of students have not been maximized due to the lack of facilities and infrastructure and the lack of creativity of educators in delivering material at the institution. The purpose of this research with the modification of water pipes can improve the movement of discus throwing number playing skills which can later be implemented to students. So that with these modifications, the teaching and learning process is not relatively monotonous, and the learning process can run as it should. In this study, researchers used a classroom action research method with sample data of class VII students consisting of 22 members. While the instruments in this study used total sampling techniques where observation data collection and motion tests of discus throwing skills. From the results of these observations and research, results were obtained with data on the lack of cognitive and psychomotor aspects of students during the pre-cycle process before the implementation of treatment. However, as much as (54.53%) there was an increase in the provision of water pipe modification treatment in cycle I. And there was a significant increase in cycle II with a percentage (86.38%). So that the results of the study can be concluded that using water pipe modifications is very useful for trainers, especially educators in providing discus throw practice or learning in amateur classes or students

**Keywords:** Modification, Disc Throwing, Water Pipe, Student.

## Introduction

Physical Education is a structure of subject groups that are compulsory at the school level both elementary, junior high, and high school. There are several aspects of sportsmanship that are very important in supporting students' characteristics, including affective, cognitive, and psychomotor aspects [1]. These three aspects play an important role in fostering the quality of students, starting from the affective aspect, where students receive information about knowledge in the field of physical education. There is a cognitive aspect, where this aspect emphasizes the value of attitudes, and the psychomotor aspect in the final assessment, which prioritizes the movement skills possessed by students [2].

Regarding various definitions related to physical education, according to experts, physical education is teaching and learning through physical activity [3]. Physical Education is also a form of effort to influence the development of students' achievement potential in order to have a good life [4]. As well as physical education is physical activity or playing in a chosen sport to achieve achievable goals [5]. The purpose of physical education itself is to advance the vision and mission of the sport itself in accordance with the Law of the Republic of Indonesia No.3 of the National Sports System of 2005 [6].

In addition to the benefits of physical education, that is, to strengthen the secondary dendritic branch and strengthen the dirty movements of the child himself [7]. So departing from these experts, it can be concluded that physical education is a very important part of learning and must be considered, because in physical education there are elements of movement and activity that can affect the realization of life processes and exams, as well as very positive goals and benefits.

In physical education learning itself, there are many sub-materials that students learn both in elementary, junior high and high school. Learning at each level is different, especially at the elementary school level. In elementary school we learn about modified games, where the purpose of the game is only to introduce various sports and does not focus on basic techniques, but can be done independently according to learning needs [8], at the junior high school level more emphasis on modified games while still referring to the game pattern, and the high school level is more focused on learning materials [9]. For example, a big ball game consisting of a football game, a basketball game, a volleyball game. As for small ball games such as table tennis, badminton, baseball etc. And there are also sports in various fields such as running, long jump, and even discus throwing in athletics. Basically, games have a great influence on children's physical development, expand knowledge, even in the future can be used as therapeutic material and moral values of children [10].

Discus throwing is an athletic sport using a wooden ball by throwing the disc forward as far as possible. Discus throwing is a movement that throws a disc made of wood which is done by throwing with the hand as far as possible [11]. Discus throwing is one branch that falls into the category of athletic sports with very thorough physical training so that it can provide satisfaction and encouragement to be able to move scientifically [12]. Achieving optimal throws requires strength and exertion. Excessive force, on the other hand, disrupts students' natural movement patterns [13]. The disc is made of metal/slick, has strong adhesion to the disc body or other suitable material. Weight centralized, at least 2 kg for men and 1 kg for women. The discus throw has been

contested since the first Olympic Games in 1896 in Athens, Greece [14]

In the elementary school learning system, of course, students find it difficult to use the right facilities and infrastructure, because motor development factors and physical and anthropometric conditions of bullet rejection students are very different. Therefore, educators need creativity in teaching and learning, because to achieve the learning process expected by teachers [15]. And modifications can have creative and innovative learning models or methods according to student problems [16], In addition, it is expected that teachers can innovate so that students do not get bored with previous forms of learning [17].

From the results of the research that has been carried out observations and actions for 2 months which have been adjusted to the educational calendar of the SMP Negeri 3 Bandar Lampung institution. With a sample of class VII students, it can be concluded that there are still many students who have difficulty learning to throw discus, because there are several factors, including, from facilities and infrastructure that have not been maximized and coupled with the weight of throwing discus so that it makes it difficult for students to make movements. Because of the importance of facilities and infrastructure in supporting the learning objectives themselves [18]. It was recorded that of the 22 students divided into 9 boys and 13 girls, there were only 2 students who were able to play the discus throwing technique, the remaining 20 students who had not completed the results of learning bullet rejection in accordance with the KKM indicator which in these indicators were expected students to be able to play

**Method**

In this study, researchers used Classroom Action Research (PTK) which focuses on solving problems in the

the discus throwing game properly and correctly. Of course this will be a big task for teachers to be able to help students to improve their skills in playing discus throwing by having creative modifications so that the teaching and learning process can run properly and is not relatively monotonous or boring.

The modification of water pipes is the result of modifications that are almost similar to previous studies. Research researched by [19] About the modification of discus throwing games using plastic plates. In the study, there was a significant increase in skilled movements in junior high school students. In line with that, it is the same as the research researched by (Dofan Ahmad, 2014) About his research entitled Development of Modified Disc Tools with Rattan Material in Junior High School Students, from the study found very significant results in students with the modification of the exercise.

From these results, researchers modified the original disc for junior high school level to be replaced with a water pipe that is designed in a circle shape similar to games that actually use water pipes. Because the implementation of modifications is indispensable in physical education by every teacher [20] And this is one alternative or solution in solving a physical education learning process [21] So that with the modification of the discus throw using the water pipe, it can maximize the movement of students' skills in playing discus throwing and with the combination of the two modifications, researchers hope that there will be an improvement and can help students to be able to express themselves in playing discus throwing. classroom. According to experts, Classroom Action Research is research that aims to improve and improve student learning outcomes with the help of teachers and educational institutions [22].

The location in this study is right at SMP Negeri 3 Bandar Lampung.

This research data collection technique uses observation and test techniques, where observation is carried out by observing and analyzing the difficulties faced by students, and test

techniques, providing direct practice tests with a minimum assessment standard of 70 KKM, the success criteria in this study are when student scores reach KKM scores of 70, with the following assessment indicators:

Table 1. Standard KKM Indicator

Value	Criterion	Description of Learning Outcomes
81 – 100	Excellent	Complete
66 – 80	Good	Complete
51 – 65	Enough	Incomplete
0 – 50	Less	Incomplete

(Source: [22] )

The sample used in this study was grade VII students totaling 22 students, consisting of 9 male students and 13 female students. The treatment was carried out for 2 cycles, because students were able to throw properly and correctly according to the minimum standards set by KKM, the researcher ended the research process with cycle II. The stages of this research are:

1. Planning Phase

At this design stage, researchers design the mechanism of the entire learning process in a structured manner, starting with providing water pipes that have been designed so that researchers can make them for students to study, as well as several evaluation tools to measure the psychomotor abilities of these students.

2. Implementation Phase

The implementation stage is a continuous mentoring process, where the researcher will direct students, among others: a) pray before starting

sports, b) do static and dynamic warm-up exercises, c) practice learning the motion of discus throwing techniques that are identical to light ball weights.

3. Observation Stage

During the observation process, researchers observe the course of learning, if it is felt that the treatment is still not optimal, researchers analyze the factors that make it difficult for students, and the treatment is carried out at the stage of the second cycle.

4. Reflection Stage

The reflection stage is the last stage of the teaching and learning process, where researchers hope that at this stage students will be able to improve good discus throwing movements by using modifications to wooden balls and actual facilities and infrastructure with the original metal ball.

**Results and Discussion**

**Result**

**Cycle I**

The results of research that has been conducted by researchers in cycle I blessed with discus throwing skills using

water pipe modifications found that there was a slight increase in the results of learning to throw from pre-cycle to the first cycle, from these results can be presented with the following table:

Table 2. Learning Results of Cycle I Water Pipe Disc Throwing

Value	Criterion	Information	Number of Students	Percentage
81 - 100	Excellent	Complete	3	13,63%
66 - 80	Good	Complete	9	40,90%
51 - 65	Enough	Incomplete	10	45,47%
0 - 50	Less	Incomplete	0	0%
	<b>Complete</b>		12	54,53%
	<b>Incomplete</b>		10	45,47%
	<b>Sum</b>		22	100%

From Table 2. It can be concluded that regarding the results of cycle I, learning to throw discus with water pipe modifications has improved. It can be seen from the pre-cycle that there are only 2 students who are able to play discus throws, now there are 12 students who have completed the skillful movements with a percentage (54.53%) and there are 10 students who are still incomplete with a percentage (45.47%). Therefore, the researcher continued his research by providing treatment in the second cycle by considering several evaluations as reflection material as follows:

1. In the position of holding a water pipe is expected to be the same as holding a real disc.

2. Students need to focus their eye coordination towards the target to be aimed at
3. The need for balance on the body when throwing

**Cycle II**

In this second cycle, researchers will provide good and correct demonstration stimulation and provide some education about things that are subject to reflection in the first cycle, along with the results of the second cycle that have been improved can be presented in the following table:

Table 3. Learning Results of Water Pipe Disc Throwing Cycle II

Value	Criterion	Information	Number of Students	Percentage
81 - 100	Excellent	Complete	6	27,28%
66 - 80	Good	Complete	13	59,10%
51 - 65	Enough	Incomplete	3	13,62%
0 - 50	Less	Incomplete	0	0%
	<b>Complete</b>		<b>19</b>	<b>86,38%</b>
	<b>Incomplete</b>		<b>3</b>	<b>13,62%</b>
	<b>Sum</b>		<b>22</b>	<b>100%</b>

In Table 3. It can be concluded that regarding the learning outcomes in cycle II there is a very significant improvement. It can be seen in the first cycle that there were only 12 students who were complete in carrying out the movement of discus throwing skills, in the second cycle there were 19 students with a percentage (86.83%) who had completed the teaching and learning process of bullet rejection and the remaining only 3 students with a percentage (13.62%) who had not been completed due to health factors. So that based on the percentage of students' skill level in playing discus throwing has reached (86.38%), the researcher stopped the study in the second cycle, and students who have not completed will get guidance by the PJOK teacher himself.

**Discussion**

Through the learning process, discus throwing skills can improve discus throwing learning outcomes with modifications to water pipes given to grade VII students of SMP Negeri 3 Bandar Lampung. The use of water pipes has proven to be very effective in the teaching and learning process, as seen in the results of Cycle I and Cycle II. The use of water pipe treatment has many advantages for

students, in addition to improving students' movement skills, it can also facilitate teachers in the teaching and learning process, because of limited time and inadequate PJOK learning infrastructure. This modification can help minimize time because the water pipe game is very simple and cheap, helping to overcome the problem of facilities and infrastructure that are less than optimal. In addition, the use of modified water pipes makes students comfortable and creates interaction in the teaching and learning process that is relatively not monotonous or boring, because this modification invites students, especially junior high school students, to actively participate in the learning process.

The results of the study found that learning in cycle I to cycle II, there was a significant increase in discus throwing skills using water pipes. It can be seen in the pre-cycle where there are only 2 students who are complete in carrying out discus throwing movements using water pipes to 12 students who are complete with a percentage (54.53%), the rest of the students are still not optimal in following the movement, because there are several factors, including: the position of holding a water pipe is expected to be

the same as holding a real disc, Students need to focus their eye coordination towards the target to be addressed, as well as balance in the body when throwing. So that with the reflection stage, researchers carry out a further research process at the stage of cycle II guided by the problems that exist at stages in cycle I. The results of the second cycle, found very positive results and a very significant improvement. Because it can be seen from the research process that the original results in the first cycle from 12 completed students are now 19 students with a percentage (86.38%). The remaining 3 students with a percentage (13.62%) due to health factors from the students themselves, so that they cannot be maximized in the teaching and learning process, but these students will get special guidance by PJOK teachers from the institution.

This study is certainly very useful for the community, especially for PJOK teachers, through this change can help minimize inadequate time and infrastructure. Along with these changes, it can teach teachers that it is important to do learning with a modified model because with this model it can involve students in the teaching and learning process because teachers are essentially facilitators [21]. In fact, teachers play an important role in supporting student development to achieve their optimal abilities [15]. And as a teacher, different skills are required by teachers as competencies that must be possessed by a professional educator [13]. So from this statement it can be concluded that the importance of understanding the meaning of a teacher in educating students.

In line with that, the research researched by [19] entitled "Increasing the Effectiveness of Learning to Throw Discus by Using Plastic Plate Modification Media

in Class Xi.B Smpn 8 Pujut Students for the 2016/2017 Academic Year". The study found that learning how to throw in discus throwing using plastic plate modification media, categorized as very effective for boys and effective for girls. The average Learning Completeness for the final attitude aspect reached 85% of boys and girls reached 72.5%.

From several studies similar to those that the researchers examined, there was support from previous researchers starting from research with a modified model of discus throwing using plastic plates or with modifications to wood or water pipes, resulting in a very positive and very significant impact on improving the movement of discus throwing skills for the scope of amateur / student classes. So the researchers hope that this research can be used as reference material or reference for educators, especially in improving the teaching and learning process of athletics in discus throw.

### Conclusion

From the research above, it can be concluded that modifying discus throwing with a water pipe can have a very large impact on efforts to improve throwing learning outcomes in junior high school students in terms of the child's motor development. A very significant increase from pre-cycle to cycle I and cycle II. In cycle I found the results of learning progress with a percentage (54.53%) and increased in cycle II with a percentage (86.38%). Of course, modified models of water pipes are used here, very useful for teachers to improve movement skills in throwing in discus throwing athletics.

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