Journal of Physical Education for Secondary Schools 3 (1) (2023) 199-206

Journal of Physical Education for Secondary Schools

Journal homepage: https://ejournal.upi.edu/index.php/JPESS

Identification of Basic Manipulative Movement Skills Throwing, Catching, Kicking, and Trapping in Children Aged 15-16 Years

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ABSTRACT

This study was conducted with the objective of identifying and describing the basic manipulative movement skills of adolescents aged 15–16 years, focusing on four fundamental motor abilities: throwing, catching, kicking, and trapping. The research employed a quantitative descriptive method aimed at providing a detailed portrayal of students' skill levels in each movement category. The data collection technique used was cluster random sampling, with a total sample of 23 students from UPI Laboratory School Junior High School. The research instrument consisted of structured observation sheets adapted from David L. Gallahue's book Developmental Physical Education for Today's Children, which offers standardized criteria for evaluating basic movement competencies. The findings of the study indicate varying levels of proficiency across the four manipulative skills: throwing (15.93%), catching (24.78%), kicking (31.86%), and trapping (27.43%). Among these, kicking emerged as the most developed skill, while throwing was identified as the least proficient. These results suggest a disparity in the development of manipulative skills among students, highlighting the need for targeted interventions in physical education programs to ensure balanced motor skill acquisition across all fundamental movements.

ARTICLE INFO

Article History:
Submitted/Received 12 Jan 2022
First Revised 05 Feb 2023
Accepted 27 Mar 2023
First Available online 28 Mar 2023
Publication Date 01 Apr 2023

Keywords:
manipulative movement,
physical education,
throwing,
kicking,
trapping.

1. INTRODUCTION

Physical education is a tool to achieve educational goals, or it can also be said as an education through the process of adaptation through physical activities such as body organs, neuromuscular, intellectual, social, cultural, emotional, and ethical. So, in the 2013 Basic Education curriculum or kurtilas, physical education is more emphasized on: 1) Having a desire to move according to basic skills; 2) Can stimulate physical growth and development along with movement development; 3) Can maintain and improve health and physical fitness; 4) Can instill discipline, cooperation, sportsmanship and follow applicable rules and regulations; 5) Can improve the formation of physical aspect development (Iyakrus, 2019) . Sports can also be said to be part of physical training activities, where it is included in physical activities to enrich and improve basic movement skills and abilities or core skill movements (sports branches), where these activities are a form of approach to aspects of physical well-being or physical health which also means dynamic health where the body is in a healthy state accompanied by its ability to move that meets all the demands of life's movements in daily activities which can be interpreted that everyone who does physical education through sports activities will be able to have an adequate level of physical fitness (Bangun, 2016) . Not only that, sports are also often accompanied by maximum mobilization which has functional reserves in the body of an athlete (Nataliia et al., 2019) . As is known that humans have three elements in building themselves, namely the first in their hearts or in the sense of having feelings, the second in their minds or in the sense of being able to determine how they think and the third in their physical or in the sense of doing everything that is done by touching and involving the elements that build in the body. Education is also a human act that is carried out consciously and systematically arranged which is carried out by humans accompanied by a sense of responsibility. And provides the view that education affects every development of a person's growth that takes place in the surrounding environment and occurs throughout life (Hartono et al., 2022) .

Basically, physical education cannot be separated from activities such as playing, because through playing children can learn about more things that they do not yet know or even experience, from there a child is educated and fostered to become a more qualified human being than those who initially could not become able, through this process this physical education wants to realize its contribution or participation in child development, through basic motor skills that humans have including three types, namely motor skills, including: locomotor movement, non-locomotor movement, and manipulative movement (Hendra & Putra, 2019) . Therefore, it is very important to learn basic motor skills at an early age, if a child does not get enough movement taught about basic motor skills. Then, the child will experience various obstacles that occur in learning basic motor skills and their more difficult skills later, such as when learning skills in sports techniques (Azizah ,2018) . Motor development is closely related to the development of the motor center in the motor center in the brain. Motor skills can develop in line with the maturity of the nerves and muscles related to a child's motor skills. Movement can be said to be the main element in a child's development . There are other developments that are related to a child's motor skills, namely reaction speed, eye and hand coordination, and dexterity in movement. When someone is more confident, they will do various activities with joy and pride (Kurniawan , 2014) . Basic movement skills can be said to be very important in a person's movement development. Basic movement skills will affect various physical activities. Fundamental Movement Skill (FMS) is a basic movement and motor skill needed to be able to encourage children's participation in various physical activities. Physical activities carried out at school, especially in physical education learning, must be designed in such a way that children can contribute to movement

DOI: https://doi.org/10.17509/jpess.v2i2.60950
p-ISSN: 2776-3307 e-ISSN: 2776-4648

activities. In the development of basic movement skills that are adequate during childhood, it will be able to produce more varied physical activity participation (Karisman, 2021).

Because manipulative movement itself is a motor skill that can involve mastery of various objects outside the body or parts of the body. When viewed from the type, manipulative movement skills can be divided into three parts, including moving objects away (throwing, hitting, and kicking), adding control (catching, collecting, and taking), and moving together (carrying/dribbling, and bouncing) (Hanief et al., 2017). Meanwhile, the characteristics of children aged 15-16 years, a child will basically always experience growth and development, this is a natural trait that always occurs in a human being. Growth is a process that refers to certain physical changes and an increase in body size while development is a process or part of the growth stage towards a more advanced and more (Misbahuddin & Winarno, 2022) . At an age that can be said to be relatively unstable, it is necessary to have knowledge about kinesthetic intelligence, where this intelligence is a child's ability to align his mind with his body so that what is conveyed through his mind will be poured into the form of body movements that can be said to be beautiful, creative, and meaningful, where each child actually has different intelligence and requires time and a process that can be said to be short or relatively long in developing more complex intelligence, depending on the abilities possessed by the child and how a child does or learns it, it can be said that each child will not be the same, of course each child is different according to their characteristics, therefore so that each child can go through it as well as possible, it can be attempted by doing or taking the right education so that the development and growth of a child can be achieved optimally and maximally by recognizing and teaching multiple intelligences, this is very important, especially kinesthetic intelligence (Kurniawati D, 2020) . In the development of movement during childhood, it is very prominent, especially in basic movement abilities such as locomotor, non-locomotor and manipulative, through the refinement or improvement of these basic movements that occur during childhood and during adolescence, basic movements will become more complex and can be mastered with the ability to utilize movement skills according to their needs, where in the end, during early adulthood, many organs of the body can reach the peak of development both functionally and physically to reach the peak of maturity (Amin & Sukur, 2022).

With the above explanation, the researcher is interested in studying basic movement skills in the form of basic manipulative movements in children aged 15-16 years. Where in previous studies, many discussed all the components of basic movements and did not focus on one basic movement skill, and many also studied early childhood. So seeing from there, the researcher is interested in these basic skills as an update, considering that children who are in this transitional age tend to have unstable characteristics both in thinking and doing movement skills because they are still influenced by various factors that influence them.

2. METHODS

The research method used by the researcher uses a quantitative descriptive research method. By using this descriptive research, it aims to describe the nature of something that is going on at the time of the research being conducted and examine the causes of a particular symptom or event. This approach is said to be a quantitative approach because it uses numbers, starting from data collection, interpretation of the data, and the appearance of the results. The research was conducted at Jl. Dr. Setiabudi No.229, Isola, Kec. Sukasari, Bandung City, West Java 40154, more precisely at SMP *LAB SCHOOL* which is located at the Indonesian Education University, Bumi Siliwangi.

DOI: http://dx.doi.org/10.17509/xxxx.xx x
p- ISSN 2776-608X e- ISSN 2776-5970

With the location of the research to be conducted in the school field and the time it was carried out during the PJOK learning process with one test conducted by 23 students of class IX at SMP *LAB SCHOOL* UPI. With the sampling technique using the *Cluster Random Sampling technique* by dividing into a group and then selecting a group randomly to carry out the test that has been determined by the researcher.

The research instrument used in this study uses a book source, written by David L Gallahue entitled " *Developmental Physical Education for Today's Children* ". The observation sheet used refers to the book written by Gallahue, namely: *Throwing, caching, kicking* and *trapping.*

3. RESULTS

The results of the research were obtained through descriptive data analysis, where raw scores were transformed into standard scores and percentile ranks. This approach was used to identify the level of students' performance in manipulative movement skills, which were then described using quantitative indicators for each type of basic skill. The observation survey focused on four types of manipulative movement skills: throwing, catching, kicking, and trapping. The percentage distribution of each skill type was as follows: throwing (15.93%), catching (24.78%), kicking (31.86%), and trapping (27.43%). The corresponding average scores for each skill were: throwing (4.5), catching (7.0), kicking (9.0), and trapping (7.75).

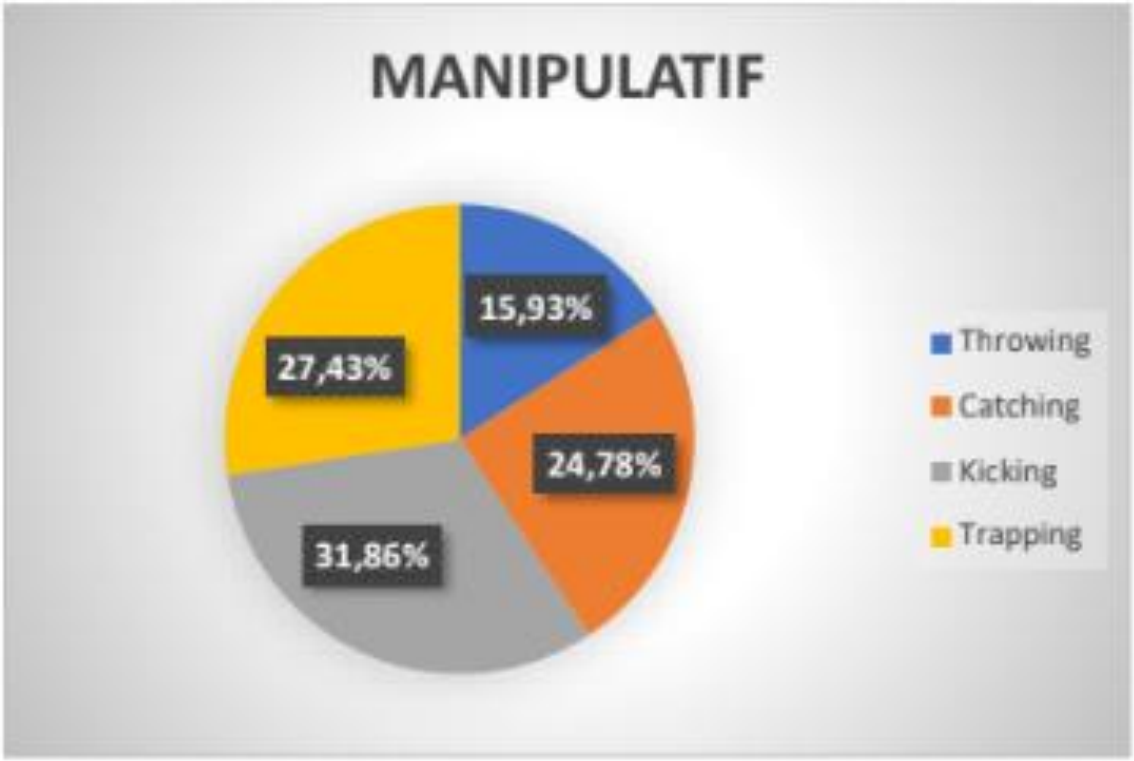
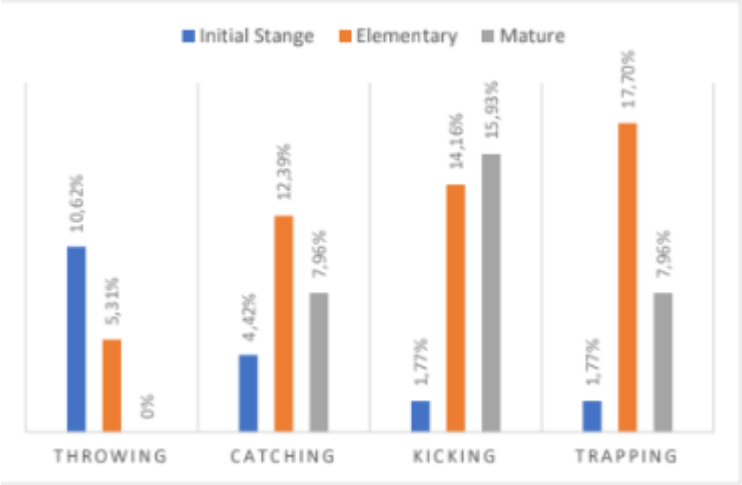


Figure 1. Manipulative Movement Test Results

Among the four components tested, kicking emerged as the skill with the highest percentage and average score, indicating that students—both male and female—performed best in this basic skill. The performance level for kicking falls within the elementary stage, which suggests that students are reasonably proficient in executing the movement, although not yet at the mature level of mastery.

DOI: https://doi.org/10.17509/jpess.v2i2.60950
p-ISSN: 2776-3307 e-ISSN: 2776-4648

Table 1. Results of Manipulative Movement Data Analysis



The distribution of students' manipulative movement skills based on developmental stages—namely initial, elementary, and mature—varies across the four assessed skill components. In the throwing skill, the majority of students were found to be in the initial stage (10.62%), with a smaller proportion in the elementary stage (5.31%), and none reaching the mature stage (0%). For the catching skill, 4.42% of students were in the initial stage, 12.39% in the elementary stage, and 7.96% demonstrated mature-level proficiency. In the kicking skill, only 1.77% were categorized at the initial stage, while a more substantial proportion reached the elementary stage (14.16%) and mature stage (15.93%), indicating relatively high performance in this area. Similarly, for the trapping skill, 1.77% were at the initial stage, 17.70% at the elementary stage, and 7.96% achieved the mature stage. These findings suggest that kicking and trapping are the most developed manipulative skills among students, while throwing remains the least developed, with the highest concentration of students at the initial level and none achieving maturity.

The distribution of students' manipulative movement skills across developmental stages—namely initial, elementary, and mature—presents a distinct performance profile that reflects varying degrees of mastery among the four skill domains assessed. In the throwing skill, a significant proportion of students (10.62%) remained at the initial stage, and only 5.31% had progressed to the elementary stage, while none reached the mature level, indicating a substantial gap in throwing proficiency. This contrasts sharply with the kicking skill, where the developmental trajectory is more advanced; only 1.77% were categorized in the initial stage, while 14.16% were at the elementary stage, and a notable 15.93% reached the mature stage, making it the most developed skill among the group. Similarly, trapping also showed promising development, with 17.70% at the elementary level and 7.96% at the mature stage. The catching skill exhibited a more balanced distribution, with 4.42% at the initial stage, 12.39% at the elementary stage, and 7.96% at the mature stage.

These results highlight kicking as the most proficiently developed manipulative movement skill among the students, suggesting that this particular skill has been more effectively internalized and practiced, possibly due to its prominence in commonly played games and physical education activities. Conversely, throwing emerged as the least developed skill, with the majority of students showing low competence and no individuals achieving maturity. This discrepancy may stem from limited instructional emphasis, less frequent practical exposure, or inadequate foundational technique in the early stages of learning.

DOI: http://dx.doi.org/10.17509/xxxx.xx x
p- ISSN 2776-608X e- ISSN 2776-5970

From a pedagogical standpoint, these findings are highly informative. They suggest that while current physical education programs may sufficiently support the development of certain motor skills like kicking and trapping, they may be lacking in promoting the systematic growth of others such as throwing. As such, targeted intervention strategies should be introduced to reinforce basic throwing skills, particularly at the fundamental and preparatory levels. Additionally, educators should consider differentiated instruction based on students' motor development stages, using formative assessments to identify weaknesses and personalize learning approaches. By doing so, physical education programs can achieve a more balanced motor skill development among students, ultimately fostering comprehensive physical literacy.

4. DISCUSSION

From the results above, it can be identified by explaining that in each component of the basic manipulative movement skills there are three stages. Among them are the *initial stage, elementary* stage, and mature stage. It should be noted that each stage has a different meaning. Where in this *initial stage stage*, students are in the stage of understanding in the form of knowledge, and in their movements, students tend to be passive in doing it because they do not involve many large muscles in doing the movement. At the *elementary stage* , students tend to be better at doing their movement skills when compared to the initial stage, because at this stage students try with their understanding by associating and implementing the movement according to their abilities even though the movement is not perfect. And finally there is the final stage, namely the *mature stage,* at this stage students have done the movement automatically because there is repetition in doing it in everyday life in the form of daily activities in doing the activity, of course students are also at this stage in a series of coordinated movements from the initial position to the final position in doing the movement.

There are many factors that influence the components of manipulative movement skills, where the basic movements they perform become better,if supported by muscle strength, flexibility, functional muscle endurance, and cardiovascular endurance. Not only that, the more movements are done or trained, the longer the intensity of the time to do it and the bigger their muscles, and if seen from their growth, it means that the better the function of their body organs, then it can be said that in terms of growth and development they will be even better (Harliawan & Anwar, 2022) .

Basically, students are able to perform various components of manipulative movement skills without assistance. Because basic manipulative movement skills are often found and even carried out by students themselves in their daily activities. But here, from the results of the study, there is a lot of diversity of movements that occur by students who have been grouped into three stages of movement skills. Not only that, gender also affects the final results obtained by students in doing it. As is known, muscle strength tends to be greater in men than in women. The characteristics of children aged 15-16 years who tend to be unstable in thinking so that it affects their movements are one of the determining factors in the final results in performing these movement skills. Given that at that age, students still tend to pay more attention to their peers in doing things. If their peers do the movement skills not seriously, then they will also do the same thing. Regardless of whether they are male or even female students. Physical condition also greatly influences the results of performing these movement skills. Because when students are in prime physical condition, the movements they achieve will be more substantial, but if students are in weak physical condition, the strength they produce will be weak and will not be obtained optimally.

DOI: https://doi.org/10.17509/jpess.v2i2.60950
p-ISSN: 2776-3307 e-ISSN: 2776-4648

Based on the characteristics and potential of three Islamic boarding schools in Pasuruan Regency, a SWOT analysis was conducted. SWOT analysis was conducted to determine the supporting factors and obstacles to the development of business units, mainly based on a sustainable creative economy in Islamic Boarding Schools. The following is an analysis of internal and external factors for the development of business units, mainly based on a sustainable creative economy in Islamic Boarding Schools in Pasuruan Regency.

5. CONCLUSION

In carrying out the four components of manipulative movement skills and their stages, body coordination movements such as eyes, hands and feet are required. Because if body movements are well coordinated, the resulting motor skills will also be good. Because the resulting motor skills depend on how students coordinate the movements.

The development of movement in children, especially in adolescents, is closely related to elements such as physical conditions, characteristics and gender. Therefore, various movement experiences are needed by the students. Because movement experience can determine the final achievement of the movement into what stage. There is a diversity of basic manipulative movement skills, this shows that these movement skills will continue to change over time.

6. AUTHORS' NOTE

In this article, the author declares no potential conflicts of interest concerning copyright, publication, and research.

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DOI: https://doi.org/10.17509/jpess.v2i2.60950
p-ISSN: 2776-3307 e-ISSN: 2776-4648