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Profile of Motor Skills of Elementary School Students

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ABSTRACT

Background: Basic movement skills are abilities that must be possessed by every child; coaching at school is a benchmark and becomes an evaluation material for students. Therefore, it is important for educators to make an evaluation of students' basic movement skills, one of which is manipulative skills.

Purpose: The purpose of this study is to see the manipulative movement skills of students, including throwing, catching, kicking, and controlling the ball.

Methods: The research method used is quantitative descriptive, where a survey was conducted on 144 elementary school students.

Results: The results of the study showed that most students had a level of manipulative skills that was in the sufficient category. However, kicking requires special attention because it has the highest percentage of "poor." Learning interventions or additional training can be focused on catching and kicking skills to increase the proportion of students who reach the "Good" category.

Conclusion: The study shows that not all students' manipulative skills are in the sufficient category; this requires special attention to follow up by carrying out manipulative movement activities or exercises.

KEYWORD: Motor Skills, Manipulatif Skills, Physical Education

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INTRODUCTION

Research on elementary school students' manipulative motor skills has shown the effectiveness of manipulative interventions in improving mathematics learning, particularly in children with mathematics learning disabilities (Lafay et al., 2019). Implicit motor learning, which is as effective as explicit motor learning, has also been shown to benefit these students

(van Abswoude et al., 2021). Additionally, physical education interventions have been shown to improve basic motor skills, including object control skills, in kindergarten children (Li et al., 2021). Active play, especially guided active play, has been shown to positively contribute to typically developing preschool children's basic motor skills, including manipulation skills (Santiago et al., 2022). These findings collectively demonstrate the importance of incorporating manipulative motor skills interventions into the education of elementary school students.

Several studies have explored the manipulative motor skills of elementary school students. Cordeiro (2015) and Olrich (2002) both emphasize the importance of these skills, with Cordeiro specifically focusing on the role of physical education in their development. Yuniar et al (2023) provided a practical assessment of these skills, finding that most students were still in the early or basic developmental stages. Finally, Susilowati & Suwarjo (2020) emphasized the need for a creative and stimulating learning environment to support students' physical-motor development.

Several studies have identified problems with students' fundamental movement abilities. Hong-b, (2014) found that students in the physical education department needed to improve core stability, dynamic stability, and limb flexibility. (Agustini et al., 2016) highlighted the impact of lack of facilities on student engagement in physical education, leading to lack of interest and boredom. This can hinder the development of fundamental movement skills (Sugden & Sugden, 1991) emphasized the need to move away from viewing children with movement problems as a homogeneous group and suggested a more individualized approach. (Alexandrovich et al., 2010) discussed the need for systemic mechanisms to provide optimal movement conditions for adolescent students, considering medical, biological, and pedagogical aspects. These studies collectively underscore the importance of addressing both individual and systemic factors in improving students' fundamental movement abilities.

It is important for educators to evaluate students' basic movement skills, including manipulative skills, because coaching at school serves as a benchmark and becomes an evaluation material for students. Basic movement skills are abilities that must be possessed by every child.

METHOD

This study is a descriptive study conducted by surveying144 elementary school students. The purpose of this study is to see the manipulative motor skills of students, including throwing, catching, kicking, and controlling the ball. The instrument used in this study is the manipulative motor skills instrument (Gallahue, 1996).

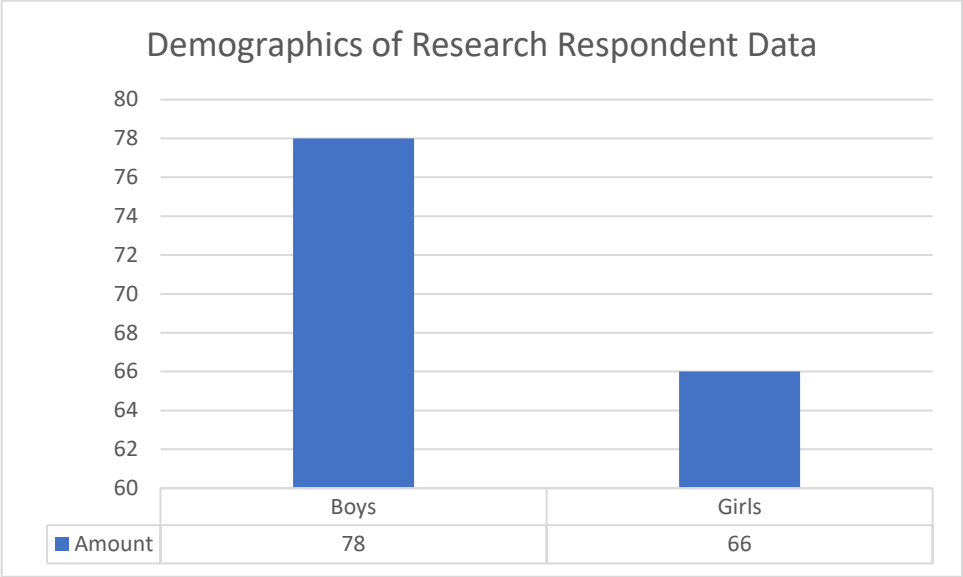

Figure 1. Demographics of Research Respondent Data

Figure 1 above shows a comparison of the amount between two groups, namely boys and girls, showing a scale of 60 to 80 with the number of respondents being 78 boys and 66 girls. The analysis conducted in this study includes descriptive and percentage analysis of the achievement of manipulative skills of elementary school students.

RESULT

The following is a description of the results of the data analysis that has been carried out, including a description of the profile of motor skills of elementary school students and the percentage of the profile of motor skills of elementary school students.

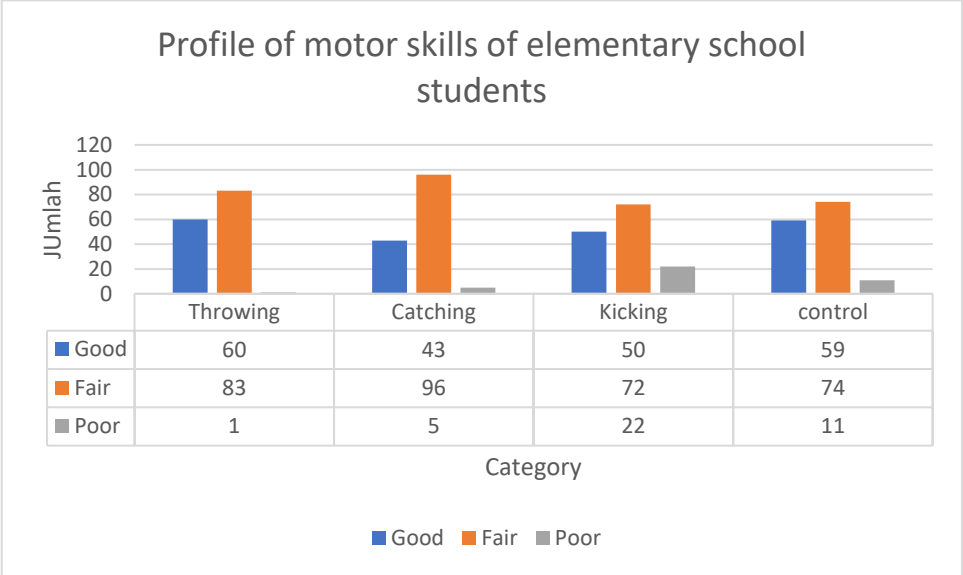

Figure 1. Grafik Profile of motor skills of elementary school students

Figure 1 is a graph of the profile of motor skills of elementary school students, which displays the profile of elementary school students' motor skills based on skill categories and

achievement levels. Most students are in the fair category for all types of motor skills. Catching has the largest number of students in the Fair category (96 students). Throwing and Control show many students in the good category. Kicking has the largest number of students in the poor category (22 students), higher than other skills. The majority of elementary school students are in the sufficient category for basic motor skills. More attention is needed for the kicking skill, which has the highest "poor" level, indicating the need for further intervention or training.

Table 1. Percentage of students' manipulative skills

Category	Throwing	Catching	Kicking	Control
Good	42%	30%	35%	41%
Fair	58%	67%	50%	51%
Poor	1%	3%	15%	8%

Table 1 shows the percentage of elementary school students based on their level of mastery of manipulative motor skills, including throwing, catching, kicking, and control. The Fair category is the largest group in all skills, especially in catching (67%) and control (51%). The "Good" category is quite high in throwing (42%) and control (41%), indicating that many students have good mastery of these two skills. The "Poor" category is most prominent in kicking skills (15%), indicating that many students have difficulty in this skill. Catching skills have the lowest percentage of "Good" (30%), although "Fair" is high. Most students have a level of manipulative skills that is in the sufficient category. However, kicking needs special attention because it has the highest percentage of "poor." Learning interventions or additional training can be focused on catching and kicking skills to increase the proportion of students who reach the "Good" category.

Discussion

The results showed that most students had sufficient manipulative skills. However, kicking had the highest percentage of "poor," so it needs special attention. Additional learning or training interventions can be carried out to increase the number of students who reach the "good" category. Several studies have explored the development of manipulative motor skills in elementary school students. Cicović et al (2015) and Stojiljković & Pirvsl (2017) found that physical education programs and special training interventions can significantly improve motor skills. Ogura et al (2019) further emphasized the importance of early intervention in children with poor motor skills. These findings collectively underscore the potential of targeted interventions to improve manipulative motor skills in elementary school students but also highlight the need for further research in this area.

Research shows that manipulative skills in children can be improved through various physical activities and interventions. Play activities and directed exercises contribute positively to the development of these skills in children aged 6–12 years (Ardanari et al., 2020). In particular, throwing, catching, and kicking skills can be improved through quality physical education programs delivered by well-trained specialists or classroom teachers (McKenzie et al., 1998). A study involving fourth graders found that boys generally showed higher proficiency in manipulative skills compared to girls, while girls performed better on fitness tests (Chen et al., 2016). Furthermore, students with higher manipulative skill competence showed better cardiovascular endurance, upper body strength, and flexibility (Chen et al., 2016). Developing learning activities, such as ball-throwing games, has been shown to be effective in improving manipulative skills for lower elementary school students (Istiqomah et al., 2019).

These findings underscore the importance of combining targeted practice and play-based activities to improve children's manipulative skills.

Recent research has explored various approaches to improving manipulative skills through practice and intervention. Game-based activities have shown effectiveness in developing manipulative motor skills among elementary school students aged 10–12 years (Prasetiyo et al., 2023). For robotic manipulation, task-based reinforcement learning with action primitives (TRAP) has shown increased efficiency and effectiveness in learning long-term manipulation skills (Wang et al., 2023). Educational interventions involving physical manipulatives (PMs) have been investigated for their potential to enhance children's learning and development, although evidence for their effectiveness is mixed (Byrne et al., 2023). In the field of unsupervised reinforcement learning, methods for transferable manipulation skill discovery have been proposed, which allow robots to learn interaction behaviors without environmental rewards and generalize to a variety of downstream manipulation tasks (Cho et al., 2022). These studies collectively contribute to our understanding of practice and approaches to improving manipulative skills across contexts and age groups.

Conclusion

Based on the results of the analysis and discussion, it shows that most students have quite good manipulative skills. However, kicking has the highest percentage of "bad," so it needs training or learning intervention to increase the number of students who are in the "good" category. The study shows that the manipulative skills of some students are not enough; they need to increase manipulative movement activities or exercises.

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Profil Kemampuan Motorik Siswa Sekolah Dasar

ABSTRAK

Latar Belakang: Keterampilan gerak dasar merupakan kemampuan yang harus di miliki oleh setiap anak, pembinaan di sekolah menjadi tolak ukur dan menjadi bahan evaluasi bagi siswa. Oleh karena itu penting bagi pendidik untuk membuat evaluasi keterampilan gerak dasar siswa salah satunya adalah keterampilan manipulatif.

Tujuan: Tujuan dari penelitian ini yaitu untuk melihat keterampilan gerak manipulatif dari siswa meliputi melempar, menangkap, menendang, mengontrol bola

Metode: metode penelitian yang digunkan yaitu deskriptif kuantitatif, dimana survey dilakukan terhadap 144 siswa sekolah dasar

Hasil: Hasil Penelitian menunjukan sebagian besar siswa memiliki tingkat keterampilan manipulatif yang berada pada kategori cukup. Namun, kicking perlu perhatian khusus karena memiliki persentase "Poor" yang paling tinggi. Intervensi pembelajaran atau latihan tambahan dapat difokuskan pada keterampilan catching dan kicking untuk meningkatkan proporsi siswa yang mencapai kategori "Good".

Kesimpulan: Penelitian menunjukan bahwa tidak semua keterampilan manipulatif siswa berada dalam kategori cukup, hal ini memerlukan perhatian khusus untuk menindak lanjuti dengan melakukan aktivitas atau latihan gerak manipulatif.

KATA KUNCI: Motor Skills, Manipulatif Skills, Physical Education

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