

The effect of pencak silat learning on improving motor skills and character building of elementary school students

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Abstract

Pencak silat is one of the martial arts that needs to be taught from an early age, especially to elementary school students. This study aims to determine the effect of pencak silat learning on improving students' motor skills and character. It will use a quasi-experimental research method with a one-group pretest-posttest design. Samples were taken using purposive sampling with the criteria of children aged 10-12 years and routinely participating in training for 12 weeks, totaling 20 students. Data collection techniques used sit ups, V sit and reach, stork stand, and questionnaires to measure student character. The instrument was valid with a reliability value of 0.92. The data analysis technique used an independent sample t-test with the help of the SPSS 29 program, which compared the mean between the pretest and posttest results. The results found that before pencak silat learning, students' motor skills were dominantly in the moderate category. After applying pencak silat learning, the dominant motor skills are in a good category with a P-value for the motor component of 0.004 <0.05, indicating a significant difference between the motor component before and after participating in pencak silat learning. Likewise, the character value of students also experienced a significant increase after pencak silat learning with a P-value of 0.002 <0.05, which indicates that there is a significant difference between character values before and after participating in pencak silat learning.

Keywords: Pencak silat, motor skills, elementary student character.

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INTRODUCTION

Pencak silat is a traditional Indonesian martial art that can be introduced to children from an early age (Lubis & Wardoyo, 2016). The

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formation of appropriate movements according to the child's needs will greatly determine the results of a child's skills towards his abilities (Iswana & Siswantoyo, 2013). Motor skills themselves are the ability to perform well-coordinated movements involving muscle and nervous system activity. Learning the basic movements of pencak silat in early childhood aims to develop motor skills, coordination, and self-discipline (Patah et al., 2021). Gross motor skills are closely related to limb coordination, this is because almost all activities are carried out by large muscles sourced in the legs and there is coordination with other limbs (Aga et al., 2023).

Many children and adolescents tend to be less physically active in this modern era due to the increased use of technology and sedentary lifestyles. This can negatively impact the development of their motor skills (Barnett et al., 2016). Therefore, effective interventions are needed to improve motor skills, and pencak silat emerges as one promising alternative. Motor development is the development of the elements of maturity and control of body movements that are closely related to the development of motor centers in the brain (Suyadi et al., 2018).

Pencak silat involves a variety of complex movements that require coordination, balance, strength, and flexibility (Patah et al., 2021). These movements include kicks, punches, and parries, as well as a variety of distinctive postures and footsteps. Regular practice in pencak silat can stimulate the development of the nervous system and muscles, which in turn can improve motor skills. Several studies have shown that martial arts, including pencak silat, can significantly benefit motor skills. A previous study found that regular pencak silat training can improve dynamic balance in primary school-aged children (Lanos & Lestari, 2022). Although the potential of pencak silat in improving motor skills has been recognized, more research needs to be done that specifically examines the effectiveness of pencak silat compared to other forms of physical activity. Furthermore, the specific mechanisms by which pencak silat influences motor skill development also need to be further explored. The

dominant physical conditions in pencak silat are agility, speed, strength, power, flexibility, balance, and endurance (Khotimah et al., 2022).

The moral decline of the younger generation in Indonesia due to the rapid flow of foreign culture and globalization has resulted in the loss of boundaries between countries and facilitates the entry of culture, information, and negative influences from various countries (Utomo et al., 2023). Characters are currently in a concerning phase, which can be seen from the many problems that focus on the loss of noble characters that are not well embedded (Sari & Sutapa, 2020). Character education is an effort to instil noble character values to become a better person, character cultivation is the foundation of the nation's character, so character cultivation needs to be done early through families, schools, communities and governments. One of them is cultivating a habitual attitude at school with good goals that are closely related to the child's disciplinary character.

Pencak silat is one of the potential methods to shape children's character and self-discipline. Previous research shows that pencak silat learning can improve the character of responsibility, discipline, and self-confidence in elementary school students (Mulyana, 2014). Character development is an important part of a child's development, traditionally, Martial arts pride themselves on instilling morality and character, which is an important part of their educational goals (Schiff, 2022). One of the important aspects developed through pencak silat is self-discipline. However, in this modern era, it is observed that many people experience a decline in their level of self-discipline due to various factors such as instant lifestyle and dependence on technology. Self-discipline is essential in everyday life as it affects one's productivity, success, and quality of life. Therefore, it is important to find effective ways to improve self-discipline, especially among the younger generation.

Pencak silat requires consistent and regular practice that can help form disciplined habits that will shape children's character (Utomo et al., 2023). Previous research revealed that there is a significant relationship between emotion regulation and self-control in Pencak Silat athletes

(Assalamy et al., 2023). This provides important implications that the development of emotion regulation skills can be an effective strategy in improving children's self-control, enabling children to perform better in sports competitions. It is further explained that insight into the importance of emotion management and character building can be a foundation for further development in the child's developmental stage.

Based on the problems obtained, further research is needed to comprehensively examine how pencak silat can be used to improve motor skills, especially in children and adolescents. This will provide valuable insights for educators, coaches, and policymakers in designing effective motor skill development programs. In addition, empirical research on the effectiveness of pencak silat in improving self-discipline still needs to be completed. The subjects in this study were students aged 10-12 years who regularly participated in pencak silat training. Therefore, further studies are needed to examine the interplay between pencak silat practice and improved self-discipline, as well as identify specific mechanisms that contribute to the development of self-discipline through pencak silat martial arts.

METHOD

This research is a quantitative study using a quasi-experimental method with a one-group pretest-posttest design which aims to analyze the differences in motor skills and student character before and after participating in pencak silat training for 12 weeks with a training frequency of 2 times/week for elementary school children. According to Pereira et al. (2024), treatment duration to subjects has demonstrated that muscle endurance can be enhanced in females aged 9-12 years by implementing a 12-week physical exercise regimen. The subjects of this study were 20 elementary school students (boys: 11 and girls: 9) from a population of 60, with samples taken using purposive sampling. In this study, the students who were still in elementary school, aged 10-12 years, and were willing to be research subjects.

This data collection technique uses motor skill tests, including endurance, flexibility, and balance tests, and uses a questionnaire to measure student character. The motor skill tests used are the abdominal muscle endurance test using sit-ups, the flexibility test using V sit and reach, and the balance test using the stork stand test. In addition, student character was measured using a student character questionnaire consisting of 23 statement items covering aspects of religion, nationalism, independence, mutual cooperation, and integrity, and the instrument was valid with a reliability value of 0.92 (Sitepu, 2022).

The data analysis technique used an independent sample t-test with the help of the SPSS 29 program, which compared the mean between the pretest and posttest results. The study was conducted by following the exercises for 12 weeks with a frequency of 2 times/week. Measurement of motor skills pretests and filling out character questionnaires were carried out at the 1st exercise, and measurement of motor skills posttests and filling out character questionnaires were carried out at the 24th exercise. This study aims to see the effect of pencak silat training in improving motor skills and building the character of elementary school students by comparing pretest and posttest results.

RESULT

Research conducted on elementary school students obtained results through measurement of motor skills, including abdominal muscle endurance, flexibility, and balance, as well as through observation sheets using questionnaires to find out the character of students who actively participate in pencak silat who regularly follow pencak silat for 12 weeks as in the following tables 1-5s in the following tables 1-5:

Table 1. Motor skills of primary school students (Pretest)

Category	Motor Skills		
	Abdominal muscle endurance	Flexibility	Balance
Very Good	0	0	0
Good	5	0	10
Moderate	50	35	50
Low	35	35	40
Very low	10	30	0

Based on Table 1, the pretest results show that students' motor skills in the abdominal muscle endurance component are dominant in the moderate category, as much as 50%; low category, as much as 35%; and very low category, 10%. The flexibility component obtained that the sufficient category was 35%, the low category was 35%, and the very low category was 30%. The balance component is obtained in the moderate category, as much as 50%; the less category, as much as 40%; and the good category, as much as 10%.

Table 2. Character values of primary school students (Pretest)

Sub Variables	Indicators	Never (%)	Sometimes	Always	Very often
			(%)	(%)	(%)
Religious	Discipline of Worship	0	75	25	0
	Pray before and after activities	10	85	5	0
	Tolerant Attitude	15	60	25	0
Nationalist	Love the country and have a national spirit	0	10	90	0
	Manage time effectively	75	25	0	0
Independent	Creative and innovative	20	50	15	15
	Good communication	40	35	25	0
Mutual cooperation	Cooperation between neighbors	25	60	15	0
	Have a spirit of solidarity	35	40	25	0
Intergritas	Be honest	0	80	15	5
	Good habits	10	45	25	20
	Exemplary	50	25	25	0
Percentage		23.3	49.2	24.2	3.3

Based on Table 2, the pretest results show that the application of student character values is dominant in the sometimes category, as much as 49.2%; always category, as much as 24.2%; never category, as much as 23.3%; and very often category as much as 3.3%.

Table 3. Motor skills of primary school students (Posttest)

Category	Motor Skills		
	Abdominal muscle endurance	Flexibility	Balance
Very Good	0	0	15
Good	40	50	60
Moderate	30	25	25
Low	25	15	0
Very low	5	0	0

Based on Table 3, the posttest results show that students' motor skills in the abdominal muscle endurance component are dominant in the good category, as much as 40%; sufficient category, as much as 30%; and the

low category, 25%. The flexibility component obtained that the good category was 50%, the sufficient category was 25%, and the low category was 15%. The balance component obtained a good category as much as 60%, a moderate category as much as 25%, and a very good category as much as 15%. Based on the results of data analysis, it is concluded that there is an increase in motor skills and significant character changes in students after participating in routine pencak silat training for 12 weeks.

Table 4. Character values of primary school students (Posttest)

Sub Variables	Indicators	Never (%)	Sometimes (%)	Always (%)	Very often (%)
Religious	Discipline of Worship	0	75	25	0
	Pray before and after activities	0	10	60	30
	Tolerant Attitude	10	15	50	25
Nationalist	Love the country and have a national spirit	0	0	20	80
	Manage time effectively	0	30	40	30
Independent	Creative and innovative	10	35	15	40
	Good communication	0	35	25	40
Mutual cooperation	Cooperation between neighbors	0	5	65	30
	Have a spirit of solidarity	0	40	25	35
Intergritas	Be honest	0	10	15	75
	Good habits	0	20	10	70
	Exemplary	20	25	25	30
Percentage		3.3	25.0	31.3	40.4

Based on Table 4, the pretest results show that the application of student character values is dominant in the very often category, as much as 40.4%; the always category, as much as 31.3%; the sometimes category, as much as 25%, and the never category as much as 3.3%. Through this study, it was concluded that there was an increase in the ability of motor skills and character of students who routinely participated in pencak silat training for 12 weeks, both male and female students experienced a significant increase.

Table 5. Results of independent sample t-test

	Sig (2-tailed)	Description
Skills Motoric	0.004	Significant
Character Values	0.002	Significant

Based on the results of the analysis, the P-value for the motor component is 0.004 <0.05, which indicates that there is a significant difference between the motor component before and after participating in pencak silat learning. The P-value for character values is 0.002 <0.05,

which indicates that there is a significant difference between character values before and after participating in pencak silat learning.

DISCUSSION

Based on the results of research obtained after observing and measuring students following pencak silat learning for 12 weeks, it was found that there was a significant increase in motor skills, including abdominal muscle endurance. In line with the results of research by [Zhao et al. \(2023\)](#), which states that the importance of abdominal muscle endurance in Pencak silat is being able to maintain body stability because strong abdominal muscles help maintain balance and body stability when performing pencak silat movements, increase punching power because strong abdominal muscles contribute to the power of punches and kicks, well-developed abdominal muscles protect vital organs from injury, good abdominal muscle endurance allows fighters to train and compete longer with optimal performance, abdominal muscles play an important role in efficient breathing, which is very necessary during training ([Aristiyanto et al., 2020](#)).

Similar research reveals that pencak silat tends to use abdominal muscles in training sessions or competitions, having good abdominal muscle strength will make it easier to move in performing moves and reduce the occurrence of injuries ([Khotimah et al., 2022](#)). It is further explained that it is necessary to have a high level of muscle from the lower extremities to the upper extremities and muscle strength in dynamic and isometric movements ([Spanias et al., 2019](#)).

Flexibility is one of the important components of the pencak silat sport. Flexibility is defined as the body's ability to perform movements within the joint space with the widest possible amplitude ([Widiastuti, 2011](#)). In the context of pencak silat, flexibility allows fighters to perform various movements efficiently and effectively. Flexibility is important in pencak silat because it can increase the range of movement, reduce the risk of injury, increase movement efficiency, assist in defense and attack techniques, and improve balance and coordination. Flexibility allows fighters to perform

movements with a wider amplitude to perform pencak silat techniques more effectively (Lubis & Wardoyo, 2016). Flexibility training can improve the performance of pencak silat athletes by improving the quality of movement and reducing the risk of injury (Hakim et al., 2023). Flexibility also increases the speed and power of movement in pencak silat, which is very important in matches (Susanto et al., 2020). Research shows a significant relationship between the flexibility level and sickle kick ability in pencak silat athletes. This confirms the importance of developing flexibility in the pencak silat training program. To improve flexibility, students can do various exercises such as static, dynamic, and PNF (Proprioceptive Neuromuscular Facilitation) (Tri et al., 2023).

Through this study, it was found that there was an increase in children's balance after participating in routine training for 12 weeks. The motor skills aspect of balance in this study found a significant increase during 12 weeks of routine pencak silat training, basic technical movements such as kicking with one foot resting, stance training has a positive impact on student balance. In the sport of pencak silat, balance supports kicking techniques, locks, and stances (Rony Syaifullah, 2023). Similar research reveals that in pencak silat, sports must have a good level of balance to be able to produce optimal kicks during training or competition (Sarwita & Is, 2020). Balance in pencak silat plays an important role in movement stability that helps fighters maintain a stable body position when performing attack or defense techniques, and good balance allows fighters to use energy more efficiently, makes it easier for fighters to react quickly to opponent attacks, increases accuracy in performing punches, kicks, or parries, and reduces the risk of injury due to falls or uncontrolled movements. Balance is used in kicks, locks, and stances. To improve balance, fighters can perform special exercises such as one-legged stands, dynamic balance exercises, and movement meditation (Lubis & Wardoyo, 2016).

This study's results also reveal an increase in student character towards a better direction after regularly participating in pencak silat

training. The statements of coaches and parents also reinforce this. This is in line with the results of previous research which states that regular pencak silat training can develop character values such as honesty, hard work, and respect in elementary school students. (Kriswanto, 2015). The results of a similar study revealed that the basic values of pencak silat shape student character, including discipline, tolerance, hard work, religion, and love of peace, further explaining that Pencak silat is effective in improving the character of the nation's next generation (Ma'ruf et al., 2022). The consistent and optimal implementation of pencak silat in pupils results in the development of character traits such as toughness and purity (Kholis, 2016).

CONCLUSION

Based on the results obtained through this research, it is concluded that pencak silat learning influences improving motor skills, especially abdominal muscle endurance, flexibility, and balance. In addition, it is accompanied by an increase in good character values for elementary school students. The results showed a significant difference before and after the application of pencak silat learning on students' motor skills and character. Based on the results of the study, it is recommended that parents, physical education teachers, and schools direct elementary school students to participate in physical activity, especially pencak silat. It is recommended for researchers to examine other aspects that have a positive impact on students who regularly participate in pencak silat.

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