Improving Learning Outcomes of Basic Pencak Silat Crescent Kick Techniques Using Learning *Vertical Electric Jump* Media For 5th Grade Male Students of Assalaamah Elementary School in 2025

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Abstract

A This study aims to improve the learning outcomes of basic roundhouse kick techniques among male students in grade 5 at IT Assalaamah Elementary School in 2025. The problem often encountered is the low mastery of roundhouse kick techniques, which is caused by conventional learning methods that lack variety and appeal. This study uses the Vertical Jump Elektrik learning media as an innovation to improve students' coordination, balance, and leg strength, which are important elements in the scissor kick. The research method used is Classroom Action Research (CAR). The research subjects are male students in grade 5 at SD IT Assalaamah. Data were collected through observation, practical tests, and documentation. The results showed a significant improvement in learning outcomes for the crescent kick. In cycle I, the average score of the students was still low at 63.35, but after the Vertical Jump Elektrik media was implemented, the average score in cycle II increased dramatically to 77.81, reaching the expected score. The use of the Electric Vertical Jump learning media was effective in improving the learning outcomes of basic pencak silat crescent kick techniques among 5th grade male students at SD IT Assalaamah by 14.71.

Keywords: First Pencak Silat Second vertical jump elektrik Third Learning

INTRODUCTION

Physical education in elementary schools aims to develop students' physical and motoric potential. One sport that has noble values and is important to introduce from an early age is pencak silat. Pencak silat not only trains physical strength, but also forms character, discipline, and sportsmanship. Pencak and silat are native Indonesian martial arts that are packaged in the form of movements that may be shown or not and are a means of increasing piety to God Almighty. (1). Learning pencak silat in Physical Education in elementary schools plays a crucial role in shaping students' physical and motoric potential from an early age (2). This is not just a physical activity alone, but a foundation for building a healthy, active, and balanced lifestyle in the future (3). Through various sports activities, especially learning pencak silat, students learn to master basic movements, improve coordination, flexibility, and muscle strength. Moreover, learning pencak silat in physical education becomes a forum for instilling positive values such as cooperation, sportsmanship, and discipline.

The innovation carried out in improving the learning outcomes of pencak silat is to create a learning tool and physical fitness test that can help students improve their motor skills, especially activities that use leg muscles, which is named the electric vertical jump (4). This tool is a breakthrough in the world of sports which is usually used to measure the explosive power of leg muscles manually, namely by using a meter attached to the wall, but with the electric vertical jump tool, we develop wireless technology and Internet of Things (IOT) technology so that it produces a tool to help in the activity of increasing and testing the measurement of explosive power of leg muscles by students simply standing and jumping in front of the media that we have made so that the results can be directly converted automatically. The results of the electric vertical jump can be seen periodically, the developments produced by the user because all the data produced by this tool will be directly visible through the android

application which can develop and improve the basic skills of the crescent kick technique in learning pencak silat (5).

The use of electric Vertical Jump media by elementary school students in pencak silat learning activities in physical education in developing physical abilities related to the explosive power of leg muscles that can develop pencak silat learning activities so that students can learn in a fun way and the results achieved are in accordance with what is expected in realizing completeness during the learning process. The advantage of this innovation is that the tool created is very easy to carry anywhere, its use is easier and the data generated from the electric Vertical Jump media can be seen well wherever this tool is used, the most important thing is that it is connected to the internet so that the results of the activity can continue to be monitored by teachers, sports coaches even though their position is not at the activity location (6). From the description above, researchers are interested in using electric vertical jump media to help improve pencak silat learning outcomes, especially the ability of the crescent kick technique in physical learning by using technology adoption so that the learning process can be carried out in an interesting and varied manner and achievement can be carried out measurably according to the context of sports measurement tests, especially the ability of pencak silat learning outcomes in the crescent kick technique.

a. Understanding Pencak Silat

Pencak silat is a product of Indonesian culture that has spread to almost all regions in Indonesia, including the Malay community. Malay society is known as an agrarian society and a community of community, so that Malay society has given birth to a culture of mutual cooperation, family, kinship, togetherness, solidarity, harmony, and social tolerance (7). The culture of mutual cooperation adopted by Malay society always carries out positive actions for mutual progress in order to realize a better life, so that the culture of mutual cooperation is also reflected in the learning of pencak silat which is applied in the learning objectives of pencak silat to defend the weak in the context of oppression, uphold the truth within the framework of friendship to strengthen relationships between humans (8).

The philosophy of pencak silat emphasizes the moral aspect, namely a philosophy that emphasizes noble morals as the basis of all human attitudes, behaviors, and conduct that are prioritized in achieving life goals in religion and moral achievement in social interactions (9). The philosophy of noble character can be applied through self-control, individuals who master the Pencak Silat martial art must be able to control attitudes and actions according to existing norms and rules, improve their quality by becoming humans who are obedient to God Almighty, and place the interests of society above personal interests while maintaining balance and harmony in nature well (10). Budi is a psychological dimension that contains elements of creativity, feeling, and intention. Pekerti means character or morals, while mulia means great or honorable. Therefore, the philosophy of noble character teaches humans as God's creations, individuals, social beings, and parts of the universe who always strive in their respective fields according to noble creativity, feeling, and intention (11). The rules of pencak silat are basic guidelines regarding the method of implementation or practice of pencak silat. These principles encompass moral teachings as well as the values and aspects of pencak silat as a whole (12). In this way, the basic principles of pencak silat encompass ethical, logical, aesthetic, and athletic norms. These principles can be interpreted as fundamental guidelines that regulate the implementation of pencak silat ethically, technically, aesthetically, and athletically as a whole. In learning pencak silat, if a silat practitioner possesses good principles, then a personality

with high morals will be formed to create a safe, peaceful, and serene life.

In the implementation of pencak silat education, the focus is not only on mastering self-defense techniques but also on efforts to build the character qualities of each individual. A pencak silat practitioner, especially one who has become a warrior, must be able to maintain, preserve, and defend the basic values of his culture such as perseverance, patience, honesty, heroism, obedience, and loyalty, as well as provide a foundation regarding things that are allowed and not allowed to be done to society (13). All of these attitudes must be well internalized in each pencak silat practitioner so that in everyday life they can be role models in creating a safe and peaceful society. As a pencak silat practitioner, there are promises and oaths that are held towards the pencak silat school where they study, this is done to preserve the traditions that must be instilled in each pencak silat practitioner so that the goal of each pencak silat school in forming a spiritual mentality can be achieved well in producing a pencak silat practitioner who is tough, strong, and still adheres to norms and religion.

b. Physical Education Learning

Physical education (Penjas) is often misunderstood as merely sports activities or physical training. In fact, its essence is much deeper and broader. Experts define physical education as an integral part of the entire educational process that aims to develop individuals holistically through physical activity. Several experts Sukintaka (2001): According to Sukintaka, physical education is a process of interaction between students and their environment, which is carried out through systematically managed physical activities. The goal is to form a complete Indonesian person (14). Bucher (1979): Bucher defines Penjas as an integral part of the overall educational process. Penjas is an educational process through physical activities selected to develop and improve organic, neuromuscular, intellectual, social, and emotional abilities (15). Jesse Feiring Williams (1999): Williams emphasizes that physical education is human physical activity that has been selected and implemented to achieve the desired goals. This includes changes and adjustments that occur in individuals when they move and learn movement (16). Cholik Mutohir (1992): Mutohir views physical education as a systematic process consisting of all activities or efforts that can encourage, develop, and foster a person's physical and spiritual potential (17). In general, from these various opinions, it can be concluded that the essence of physical education is education through physical activity, not just education about physical activity itself. This means that physical activity (movement, games, sports) is used as a tool to achieve a larger educational goal, namely the development of the whole individual.

Physical education is an integral part of the education system that plays an important role in helping the overall physical development of children (18). More than just sports lessons, physical education aims to build a foundation of health and fitness that will be beneficial throughout life. Here are some of the main goals of physical education in helping children's physical development a) Improving Physical Fitness, namely Physical education focuses on developing fitness components such as muscle strength, flexibility, cardiovascular endurance, and coordination. Through various physical activities, children are trained to have a fitter and stronger body, so they are less likely to get sick, b) Developing Motor Skills: Basic movements such as running, jumping, throwing, catching, and kicking are the foundation of all physical activities. Physical education helps children master gross motor skills (movements involving large muscles) and fine motor skills (movements involving small muscles) which are very important for their growth and development, c) Building

Strong Muscles and Bones: Regular physical activity, such as that in physical education, stimulates bone growth and density as well as muscle strength. This is very vital during a child's growth period to prevent bone health problems later in life, d) Preventing Health Problems: An active lifestyle taught through physical education can help children maintain an ideal body weight and prevent obesity. In addition, the habit of exercising from an early age can reduce the risk of chronic diseases such as type 2 diabetes and hypertension in the future, e) Improving Posture and Balance: Through structured exercises and activities, physical education helps children improve posture, improve balance, and develop awareness of their body's movement space. f) Meeting Children's Movement Needs: Children naturally have a need to move and play (19). Physical education provides a structured space and time for them to channel their energy positively, which also serves as a counterbalance to learning activities in the classroom which tend to be passive. From the above opinion we can conclude that physical education is not only about making children "good" at certain sports, but also about instilling healthy and active lifestyle habits that will be valuable provisions for them throughout their lives.

c. Electric Vertical Jump Media

Electric Vertical Jump Media is a breakthrough in the world of sports which is usually used to measure the explosive power of leg muscles by using it manually, namely by using a meter attached to the wall, but with the electric vertical jump tool, we develop wireless technology and Internet of Things (IOT) technology so that it produces a tool to help in the activity of increasing and testing the measurement of explosive power of leg muscles by students simply standing and jumping in front of the media that we have made so that the results can be directly converted automatically (20). The results of the electric vertical jump can be seen periodically, the developments produced by the user because all the data produced by this tool will be directly seen through the Android application (21).

The use of electric Vertical Jump media by students in physical education learning activities and helps sports clubs in developing physical abilities related to the explosive power of leg muscles. Then this tool can also be used by the sports of pencak silat, karate, taekwondo, soccer, volleyball, basketball, badminton and sports related to physical abilities, especially those related to the explosive power of leg muscles. The commercial value of this tool is very profitable because all sports activities in learning activities, training and tests can use Electric Vertical Jump media and currently the use of sports science in sports has been emphasized in the form of government regulations. The benefits of Electric Vertical Jump media as a tool in physical education learning, sports training tools especially physical abilities and tools as tests and sports measurements. The advantages of this innovation are that the tool created is very easy to carry anywhere, its use is easier and the data generated from the electric Vertical Jump media can be seen well wherever this tool is used, the most important thing is that it is connected to the internet so that the results of activities can continue to be monitored by teachers, sports coaches even though their position is not at the activity location. The project to be worked on is to develop the Electric Vertical Jump media to be better with a stronger component shape, waterproof, human error media does not occur again and the android application is already available on the playstore application so that the Electric Vertical Jump learning media is ready to be marketed to the public in helping sports learning and training. The Electric Vertical Jump is expected to help the government program in the use of sport cages in realizing the National Sports Grand Design (DBON) in

realizing the best achievements in the Olympics and realizing community participation in sports, so that a healthy and strong society is realized in welcoming and realizing the golden generation of Indonesia. Vertical jump is the ability to jump as far as possible in a standing position with straight legs used as support in sports activities. Vertical jump is used as a measuring tool in seeing the explosive power of the leg muscles which serves to see the extent of the ability and function of the thigh muscles and calf muscles in carrying out a physical performance, especially in carrying out achievement sports activities and educational sports that support the growth and development of students both in gross motor skills and fine motor skills. The implementation of the leg muscle explosive power test using the vertical jump test carried out in schools and sports training places is still done manually by preparing manual equipment, namely 1 meter, chalk powder as a marker and a wall with a minimum height of 4 M. In carrying out the test, the test position must be near the wall and the jump results are calculated manually using a meter and entered into the formula, Average Power (watts) = (Square root of 4.9) x body mass (kg) x (square root of jump distance (M)) x 9.81) (3). When in the field, this becomes an obstacle experienced by coaches and sports teachers when conducting the leg muscle explosive power test through the Vertical jump because there must be a special place, supporting equipment that is still manual and the absence of supporting technology in periodically monitoring the results of increasing leg muscle explosive power. The breakthrough was made by programming by modifying the formula (S = V x T) namely V = calibration / Speed (cm / second), T = time obtained from the results of the tool's performance (M / S), S = distance / height (Cm). The electric vertical jump is very important for coaches and sports teachers to make it easier to carry out training activities and tests of leg muscle explosive power and monitor the development of students and athletes, with a technological approach because the electric vertical jump has created Big Data to store the results of the tests carried out and is equipped with Last Ricord which has been packaged in the form of a diagram so that it makes it easier for teachers and coaches to monitor the results of leg muscle explosive power (vertical Jump).

RESEARCH METHOD

This research uses the classroom action research (CAR) method. This approach was chosen because it aims to improve direct classroom learning practices, specifically improving learning outcomes for the basic crescent kick technique in pencak silat. CAR is cyclical and iterative, consisting of four main stages: planning, acting, observing, and reflecting.

Research Subjects and Locations

* Research Subject: 5th grade male students of Assalaamah Islamic Elementary School in 2025.
* Research Location: SD IT Assalaamah.
* Research Time: Even semester of the 2024/2025 academic year.

Research Instruments

Instruments used to collect data include:

1. Skills Test: This is a practical test to measure students' ability to perform the basic crescent kick technique. Assessment includes stance, start, kick execution, and finishing stance.
2. Observation Sheet: Used to observe student and teacher activities during the learning process. This observation records student participation, the effectiveness of media use, and any challenges that arise.
3. Interviews: Conducted with teachers and several students to dig deeper into information regarding learning experiences, perceptions of learning media, and obstacles faced.

4. Documentation: In the form of photos or videos of learning activities to provide visual evidence and supporting data.

Research Procedures (PTK Cycle)

This research will be carried out in several cycles, where each cycle consists of four stages.

Cycle I

1. Planning: Teachers and researchers develop a lesson plan that will integrate the electric vertical jump media. Lesson plans are prepared, instruments are assembled, and success criteria are established.
2. Implementation: The teacher conducts a lesson on basic crescent kick techniques using an electric vertical jump device. Students practice kicking towards a target whose height has been adjusted by the device.
3. Observation: Researchers observe the learning process, record data from observation sheets, and conduct initial assessments of student learning outcomes.
4. Reflection: Teachers and researchers analyze the results obtained from Cycle I. If the results have not reached the established success criteria, improvements are made for Cycle II.

Cycle II

1. Planning: Based on the results of Cycle I reflection, the teacher and researcher revised the learning plan, such as adjusting the height of the target on the tool, or providing additional exercise variations.
2. Implementation of Action: The teacher re-implemented the learning with the planned improvements.
3. Observation: The researcher re-observes the learning process and records the data.
4. Reflection: Re-analyze the results of Cycle II. If the success criteria have been met, the research can be stopped. However, if not, it can be continued to the next cycle.

Data Analysis Techniques

The collected data will be analyzed qualitatively and quantitatively.

1. Quantitative Analysis: Using data from the crescent kick skill test, the average kick score before and after the use of the media will be calculated.
2. Qualitative Analysis: Using data from observation sheets and interviews. This data will be interpreted to describe the learning process, student responses, and challenges encountered. The results of this analysis will form the basis for improvements in the next cycle. The success criteria for this research are determined by a significant increase in average student learning outcomes and the achievement of predetermined indicators.

RESULTS AND DISCUSSION

Based on the table above, it shows that the average value of the results of learning basic pencak silat techniques is not complete. The average value of the results of learning basic pencak silat techniques is 68.68 (rounded to 68.7), while the Minimum Completion Criteria (KKM) is 75. Based on the initial test data, the results of learning basic pencak silat techniques show that 13 students or 31.25% achieved learning completion, while 21 students or 68.75% did not complete. For more details, the following is a table and bar chart of the initial conditions of the results of learning basic pencak silat techniques for male students in grade 5 of SD IT Assalaamah in the 2024/2025 academic year before the Classroom Action Research was conducted as follows:

Number of Students	Completion Percentage	Information
13	31,25 %	Completed
21	68,75 %.	Not Completed

Based on the table above, it shows that the average value of the learning outcomes of basic pencak silat techniques in Cycle I is 63.35. From the table above, in Cycle I/Action I, there was an increase from the initial condition where the initial average value was only 67.35 (67.3). Based on the data from the Cycle I basic pencak silat learning outcomes test for male students in grade 5 of SD IT Assalaamah in the 2024/2025 academic year, students who achieved completeness of learning outcomes were 25 students or 73.52%. While the number of students who did not complete was 9 students or 26.48%. From the initial condition to Cycle I, it turned out to have increased by 42.27%. However, the increase in learning outcomes has not yet met the set target. The unachieved target needs to be analyzed and reflected. For more details, the following is a table and bar chart of the completeness value of the learning outcomes of basic pencak silat techniques from the initial condition to Cycle I as follow:

Number of Students	Completion Percentage	Information
25	73,52 %	Completed
9	26,48 %.	Not Completed

Based on the above, it shows that the average learning outcomes of the basic techniques of pencak silat crescent kicks from Cycle I to Cycle II are Complete. The average learning outcomes of the basic techniques of pencak silat Cycle II are 78.8. Based on the results of the Learning Test of the basic techniques of pencak silat Cycle II in the 5th grade male students of SD IT Assalaamah in the 2024/2025 academic year who achieved the completion of the learning outcomes of the basic techniques of pencak silat were 30 students or 88.24%. While the number of students who did not complete was 4 students or 11.76%. From Cycle I to Cycle II, it turned out to have increased by 14.71%. For more details, the following is a bar chart of the completion value of the learning outcomes of basic techniques of pencak silat from Cycle I to Cycle II as follows:

Number of Students	Completion Percentage	Information
30	88,23 %	Completed
4	11,76 %.	Not Completed

CONCLUSION

Based on the results of learning pencak silat crescent kick techniques using electric vertical jump learning media in physical education learning for 34 5th grade students of SD IT Assalamah, it was concluded that, the average learning outcomes of basic pencak silat techniques in Cycle II were 78.8. Based on the results of the Learning Test for basic pencak silat techniques in Cycle II for 5th grade male students of SD IT Assalaamah in the 2024/2025 academic year, 30 students or 88.24% achieved completeness in learning basic pencak silat techniques. Meanwhile, the number of students who did not complete was 4 students or 11.76%. From Cycle I to Cycle II, it turned out to have increased by 14.71%.

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