

Improving Physical Fitness Through A Circuit Games For Primary School Student

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Abstract

Physical fitness is a crucial asset for students. Good physical fitness enhances their ability to perform daily tasks and activities efficiently. Conversely, students with low fitness may struggle to complete their daily routines. Circuit training games are interval training programs that combine aerobic exercise, strength training, and flexibility. Participants move through a series of stations, completing specified exercises within a set timeframe before proceeding to the next station. This study employed an action research methodology to observe changes in student behavior and assess improvements in physical fitness through circuit training games. The researcher used the TKSI (Tes Kebugaran Siswa Indonesia) to measure student fitness levels in schools

Key words : Action research method, Circuit Games, Physical Fitness

1 INTRODUCTION

Physical education is a systematic process of learning through physical activities designed to enhance physical fitness, motor skills, knowledge, and behaviors related to healthy, active living, sportsmanship, and emotional intelligence. It is a lifelong process of human growth and development, closely tied to human movement.

Physical education plays a pivotal role in the educational process, particularly in primary school. Sports education is a deliberate and structured approach to physical activity that aims to achieve physical growth, health, and fitness. Physical fitness is the ability to perform daily tasks efficiently without undue fatigue and to enjoy leisure time. It's the body's capacity to carry out daily activities without significant exhaustion. Several components in physical fitness are forms of improving physical fitness. According to the Ministry of Education, Culture, Research, and Technology of Indonesia, the components of physical fitness include: 1) Cardiovascular endurance, 2) Muscle endurance, 3) Muscle strength, 4) Flexibility, 5) Body composition, 6) Speed of movement, 7) Agility, 8) Balance, 9) Speed of reaction, 10) Coordination.

TKSI (Tes Kebugaran Siswa Indonesia) is the Indonesian Student Fitness Test, a physical fitness test package developed by The Research Center for Education Ministry of Education, Culture, Research, and Technology of Indonesia. This test measures students' physical fitness levels. Physical Fitness Phase A Tests for Primary Students are KAKU Test (Sit and Reach Test) to Measure flexibility, BSAKI Test (Standing Balance Test) to Measure static balance, LATANGKAP Test to Measure hand-eye coordination, LABOBA Test to Measure agility, and JARI Test (Multi-Stage Fitness Test) to Measure cardiovascular endurance (heart and lungs).

Physical fitness is also one of the main assets that students must have. With good physical fitness, students will find it easier to carry out their activities or work. Conversely,

students with a low level of physical fitness will experience difficulties in carrying out their daily activities.

This study's background is that some students get tired easily when exercising outdoors and are less enthusiastic about monotonous learning processes. The physical fitness level of year 2 primary students is unknown, and the improvement of the physical fitness level of year 2 primary students through circuit training is unknown.

Primary school students aged 6-12 are at a crucial stage of growth and development. During this period of physical development, there are often different trends compared to the previous and subsequent periods. These differences in trends occur in terms of rapidity and in growth patterns related to the proportions of body parts in each child. Especially after the pandemic, it was observed that some students easily get tired when doing outdoor sports. The level of physical fitness of each child is very different, so it is necessary to measure and improve the level of children's physical fitness at school.

Games combined with a physical fitness agenda will make students consciously achieve physical fitness because games are free with rules that are forced from outside to build students' physical fitness. Circuit games are a game or exercise method that consists of several posts with predetermined types of games. Circuit training is adapted from the circuit training model introduced by R.E. Morgan and G.T. Adamson in 1953 at the University of Leeds in England. The stations from the training program are arranged in a circuit, and this model is called circuit training. This training model is popular and recognized by many trainers, physical education experts, and athletes as a training system that can improve physical fitness simultaneously and comprehensively, including strength, endurance, muscle power, speed, flexibility, agility, coordination, balance, accuracy, and reaction time.

Previous research aimed to develop a circuit game model as a tool to improve basic locomotor movement skills in elementary school lower grades. This model was designed through several stages, from needs analysis to field testing. The final result of this research is a learning model consisting of a series of fun physical activities, such as Traffic Lights, My Cone Hat, Hopscotch Race, Walking Stick, and Ball Tunnel. This model is expected to be an effective learning alternative to develop students' motor skills while providing a fun learning experience.

Previous research aimed to create simple but effective games that can be played without any tools, specifically designed to improve the basic movement skills of elementary school lower grades. Through research and development, five interesting game models were produced, such as "Beware of Mines", "Finding a House", and others. The development process refers to the Borg & Gall model, involving a careful preliminary study stage and a systematic product development stage. The final result of this research is a practical DVD and guidebook, ready to be used by teachers to help the learning process of basic locomotor movement skills for students at SDN I Gondang, SDN II Gondang, and MI Basin Kebonarum Klaten.

The variation of physical activities in circuit game models is very important to maintain students' interest and ensure that all components of physical fitness are trained evenly. Training stations can be designed to train muscle strength, cardiovascular endurance, agility, and balance. The circuit game model can be applied at various educational levels, including elementary schools. However, it needs to be adjusted to the age and abilities of the students. There are 3 posts of circuit games in this study: Lompat Karet, Balance Relay Race, and Dragons Tail.

The advantages of circuit training are that it can improve various components of physical fitness simultaneously in a relatively short time. In a circuit system, everyone can train according to their own will and can correct their own progress. Circuit training is easy to supervise and saves time because in a relatively short time, many people can train at once. Although it has many advantages, the circuit training model also has some drawbacks. One of them is that it requires thorough preparation from the teacher. In addition, this model requires a fairly large space to arrange the training stations.

The theory of physical fitness suggests that regular physical activity is very important for children's growth and development. The circuit game model, with its fun variety of movements, can meet the need for diverse and interesting physical activities for students. In addition, the principle of overload in physical exercise can also be applied in the circuit game model, where the intensity and duration of exercise are gradually increased to continuously stimulate improvements in physical fitness. In this study, the author will research the effect of the circuit game model on improving students' physical fitness in Year 2 student.

2 RESEARCH METHODS

Action research is a reflective inquiry undertaken by individuals or groups to improve their practice. It's a cyclical process that involves planning, acting, observing, and reflecting. This method is particularly effective for teachers, educators, and social workers who want to enhance their professional practices. By identifying a specific problem or issue within their field, researchers can design interventions, implement them, collect data, analyze the results, and then make necessary adjustments. This iterative process allows for continuous learning and improvement, making it a valuable tool for addressing real-world challenges.

Action research is a systematic inquiry conducted by teachers or researchers to improve their practice. It involves a cyclical process of planning, acting, observing, and reflecting. This approach, often attributed to Kemmis and Taggart, provides a framework for teachers to investigate their own teaching practices and make data-driven improvements.

In a classroom setting, action research offers a unique opportunity for teachers to delve into specific challenges or areas of interest within their teaching. By systematically planning interventions, implementing them in their classrooms, observing the outcomes, and reflecting on the findings, teachers can gain valuable insights into their practice.

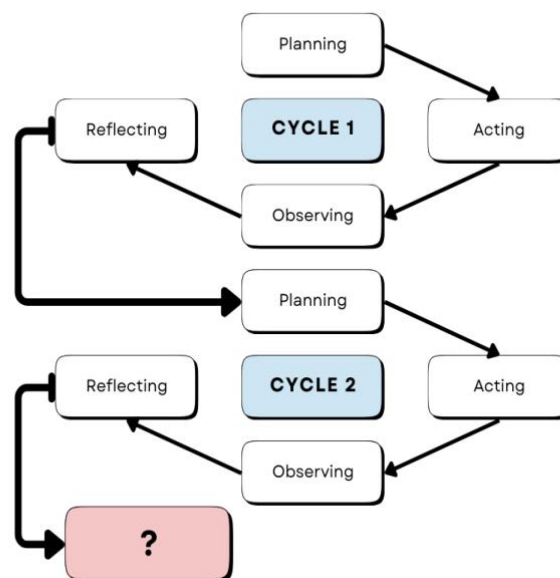


Figure 1: Action Research

The four stages of the action research cycle are interconnected and iterative. The planning stage involves identifying a specific focus for the research, setting clear goals, and developing strategies to address the chosen area. During the acting stage, the teacher implements the planned interventions in their classroom, collecting data as they go. The observing stage involves gathering evidence to assess the effectiveness of the

interventions, using methods such as observations, interviews, or surveys. Finally, the reflecting stage involves analyzing the data collected, drawing conclusions, and identifying areas for improvement or further investigation.

One of the key benefits of action research is its collaborative nature. Teachers can work together to identify common challenges, share ideas, and support each other throughout the research process. This collaboration can lead to a more comprehensive understanding of the issues at hand and more effective solutions. Additionally, action research can empower teachers to take ownership of their professional development. By engaging in systematic inquiry, teachers can develop critical thinking skills, enhance their pedagogical knowledge, and become more reflective practitioners.

This study has cycles I and II to achieve research success, with 75% of year 2 primary students having TKSI scores of moderate, good, or excellent. Action researchers often refer to this action research model. In this model, action and observation activities are combined simultaneously. The teacher and a researcher also conduct observations to observe changes in student behavior.

The observation results are then reflected on to plan the next action stage. The action cycle is carried out continuously until the researcher is satisfied, the problem is solved, and the improvement in learning outcomes has reached a maximum or no longer needs to be improved.

3 RESULT AND DISCUSSION

Based on the pre-action observation, it was found that there were 13 male students and 16 female students, with 81% of students having a low body mass index. Furthermore, field notes indicated that most students felt tired during Friday sports activities, especially after 10:00 AM. This suggests a need to improve the fitness level of Grade 2 students. The results of this pre-action observation serve as the initial reflection for the research, leading to the planning, action, observation, and reflection stages in the first cycle. Subsequently, circuit training games will be implemented as an intervention to enhance the fitness of Grade 2 students.

The pre-action results show that many students have a BMI below the ideal range. This condition is one indicator that students need to improve their physical fitness. Limited motor skills among students may be one of the factors contributing to low BMI. Therefore, the development of a circuit training game model aimed at improving physical fitness outcomes is expected to be a solution to this problem.

The researcher conducted observations using the classroom action method. The findings of the Cycle I observation show that the assessment for the TKSI Test that meets the success criteria is to achieve a total percentage of 75% with moderate, good, and excellent criteria on each test conducted. For the KAKU Test, the moderate, good, and excellent criteria are only 36%, which is still far from the research success criteria. Similarly, for the BESA KI and JARI Tests with moderate, good, and excellent criteria, each is 61% and 67%, respectively, which has not yet achieved research success. The LATANGKAP and LABOBA Tests have achieved the research success criteria with percentages for moderate, good, and excellent criteria, respectively, of 81% and 94%.

The reflection of Cycle I shows that the aspects of flexibility, static balance, and cardiovascular endurance have not yet met the success criteria. Improvement needs to be achieved as often as possible. To improve the weaknesses and increase the success criteria for child development achieved in Cycle I, the researcher re-planned the research by creating the next Cycle.

Table 1. Observation results for each Cycle 1 and 2 Test

TKSI Fase A	Moderate, Good, and Excellent Criteria		Very Poor and Poor Criteria	
	Cycle 1	Cycle 2	Cycle 1	Cycle 2
KAKU Test	36%	75%	64%	25%
BESAKI Test	61%	97%	39%	3%
LATANGKAP Test	81%	86%	19%	14%
LABOBA Test	94%	97%	6%	3%
JARI Test	67%	92%	33%	8%

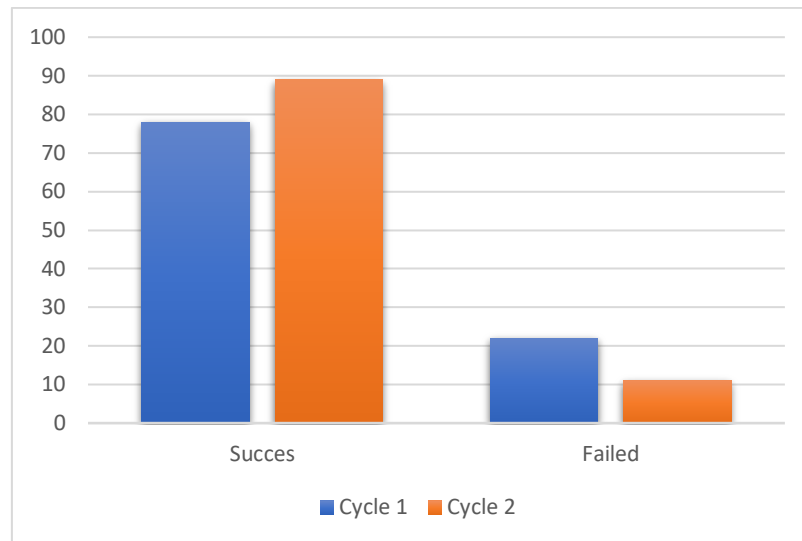
Prior to the implementation of the circuit training game model in the second cycle, the researcher undertook the following preparatory steps: provisioning of necessary equipment, development of an observation sheet for the TKSI Phase A, formulation of a program charter, solicitation of collaborators to act as observers, organization of classroom management, and provision of additional support to students who had yet to meet the predetermined success criteria. The anticipated outcomes of this cycle included: enhanced student engagement and enthusiasm in the circuit training game model, fostering a sense of accomplishment among students in performing the movements, and improvement in areas where the initial success criteria were not met.

In the second cycle, the lesson plan will be more structured. The first step is to map out the flow of movement for the circuit training game activities on the field. This mapping will ensure that each student has a clear path to follow the sequence of physical activities that have been arranged. With clear visualization, students can more easily understand and follow each stage in the circuit game.

During the lesson, the teacher will provide guidance and reinforcement to students. This is important to ensure that students perform the movements correctly and safely. In addition, the teacher will also create a healthy sense of competition among students. Appreciation will be given to students who successfully achieve their targets or meet the success criteria. With recognition, students will be motivated to continue improving their abilities.

Not all students will achieve the same target at the same time. Therefore, the teacher needs to provide special attention to students who have not yet met the success criteria. The teacher will provide additional encouragement and motivation to these students. In addition, the teacher can also provide assistance or modifications to certain movements so that students can do them more easily. In this way, all students have the same opportunity to develop and reach their full potential.

The finding of the Cycle II observation can be seen that the assessment for the TKSI Test that meets the success criteria is to achieve a total percentage of 75% with moderate, good, and excellent criteria for each test conducted. For the moderate, good, and excellent criteria, the KAKU Test is 75%, which means there is an increase from Cycle I to Cycle II. Similarly, for the BESAKI Test and JARI Test with moderate, good, and excellent criteria, each of them is 97% and 92%, respectively; there is also an increase in Cycle I that did not achieve research success. At the same time, the LATANGKAP Test and LABOBA Test showed an increase in percentages for moderate, good, and excellent criteria, respectively, of 86% and 97%.



Graph 1. Comparison of TKSI Score Percentages Cycle I and II

The criteria for success in the percentage of the final TKSI score are reaching a total percentage of 78% in Cycle I and an increase of 89% in Cycle II. The results of the Classroom Action Research conducted over two cycles involving 19 female students and 17 male students, it can be concluded that circuit games can improve students' physical fitness. Students' physical fitness has improved through circuit games consisting of rubber band jumping, balance relay race, and dragon's tail

4 CONCLUSION

Based on the results of the classroom action research conducted in two cycles in Year II Student in the second semester in May and June of the 2023-2024 school year, which consisted of 19 female students and 17 male students, it was found that circuit games can improve student physical fitness. Students' physical fitness has improved through circuit games model.

The percentage increase in the TKSI test on the flexibility aspect of the KAKU Test increased from 36% in Cycle I to 75% in Cycle II. The BESA KI Test increased from 61% in Cycle I to 97% in Cycle II. The LATANGKAP Test increased from 81% in Cycle I to 86% in Cycle II. The LABOBA Test increased from 94% in Cycle I to 97% in Cycle II. The JARI Test increased from 67% in Cycle I to 92% in Cycle II. Overall, there was an 11% increase in the TKSI test score. The TKSI score in Cycle I was 78%, and in Cycle II, it increased to 89%.

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