



## The Application of Active Ice Breaking as a Strategy to Improve Elementary School Students' Concentration in Physical, Sports, and Health Education Learning

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### Abstract

This study aims to determine the effectiveness of the application of active ice breaking in maintaining the concentration of elementary school students in Physical Education, Sports, and Health (PJOK) learning. The research used a quantitative method with a quasi-experiment model (quasi experiment) model pretest-posttest control group design. The study subjects consisted of 40 students of class V who were divided into two groups: experimental (with active ice breaking) and control (without treatment). The research instrument is in the form of student concentration observation sheets. The results of the data analysis showed that there was a significant increase in the average concentration score in the experimental group from pretest to posttest (mean difference of 15.15;  $t = 55.27$ ;  $p = 0.000$ ), while in the control group the increase was only 2.55 ( $t = 22.34$ ;  $p = 0.000$ ). The independent sample t-test showed significant differences between the experimental and control groups on the posttest ( $t = 15.99$ ;  $p = 0.000$ ). Thus, the application of active ice breaking has proven to be effective in increasing students' concentration during PJOK learning. This strategy can be used as a practical and applicable approach by teachers to create more focused, interactive, and enjoyable learning at the elementary school level.

**Keywords:** Active Ice Breaking, Study Concentration, PJOK, Elementary School Students

### 1. Introduction

Physical, Sports, and Health Education (PJOK) is one of the important components of the basic education curriculum that aims to develop the physical, psychological, social, and emotional aspects of students (Lengkana & Muhtar, 2021; Syafruddin et al., 2022). PJOK learning in elementary school not only functions as a means of distributing physical activities, but also as a medium for character formation and life skill development (Iqbal, 2021; Laxsmi et al., 2025; Pradana, 2021). To achieve this goal, an effective and fun learning strategy is needed, which is able to maintain student engagement and concentration throughout the learning process. However, in practice, maintaining students' concentration during PJOK learning is often a challenge for educators, especially because of the distracted characteristics of elementary school students' development.

Concentration is the ability to focus continuously on an activity or object in a certain time (Aziz & Jahrir, 2024; Fauzia et al., 2023). In the context of PJOK learning, concentration is the key to students' success in understanding instructions, following movements appropriately, and maintaining safety in activities (Bierer & Chen, 2010; Margiathi et al., 2023). Unfortunately, elementary school students are



in the stage of concrete operational cognitive development according to Piaget's theory, where their thinking abilities are still limited to real things and have not been able to maintain attention stably over a long period of time (Sani, 2022; Suralaga, 2021). This causes many students to lose focus during learning, especially if the learning method is less varied or too monotonous.

In such situations, a creative and adaptive approach is needed to maintain students' enthusiasm and concentration. One approach that can be applied is the use of active ice breaking. Active ice breaking is a form of icebreaker activity that is carried out through light movements, simple games, or other fun activities that involve physical and social aspects (Fitria, 2023; Sukmajadi et al., 2021). Ice breaking not only serves as a warmer atmosphere, but also as a means to build emotional involvement and mental readiness of students in receiving learning materials (Bella, 2021; Sani Utami et al., 2021). In PJOK learning, active ice breaking is believed to be able to provide a pleasant transition between learning activities, prevent boredom, and reactivate students' focus and enthusiasm.

The application of ice breaking in learning is actually not new. Many teachers have used this strategy spontaneously in the classroom learning process. However, its implementation is often not systematically planned and has not been scientifically evaluated, especially in the context of PJOK learning in elementary schools. In fact, if designed correctly, active ice breaking can be an integral part of a learning strategy that not only attracts students' attention, but also supports the achievement of learning goals. Therefore, further in-depth research is needed to find out the extent to which active ice breaking can be used as an effective strategy in maintaining students' concentration during PJOK learning.

The urgency of this research is strengthened by the real conditions in the field which show that many students experience a decrease in focus when learning lasts more than 20–30 minutes. This not only hinders the learning process, but can also increase the risk of accidents when physical activity is done without full awareness. PJOK teachers often have difficulty managing classes when students lose interest or attention, especially if it is done outside the classroom with many distractions. Active ice breaking, in this context, acts as a mild intervention but has a significant impact in redirecting students' focus positively. In addition, ice breaking activities also provide the cognitive pause moments that students need to reset their energy and emotions.

From a learning psychology standpoint, active ice breaking can stimulate the central nervous system and increase blood flow to the brain, thereby helping students improve executive functions such as attention, concentration, and impulse control. Simple physical activities such as rhythmic patting, group movement games, or light simulations can provide much-needed multisensory stimulus in the learning process of elementary school-aged children. Ice breaking also supports social and affective learning because it encourages positive interaction between students. Thus, the benefits of ice breaking are not only limited to the aspect of concentration, but also include the development of students' social skills, cooperation, and confidence.

Overall, this research is present as a response to the urgent need for effective learning strategies in facing the learning concentration challenges of elementary school students in PJOK lessons. In the context of 21st-century education that demands active, creative, and competitive students, creating a fun learning atmosphere and facilitating concentration is essential. Active ice breaking is believed not only as a sweetening activity, but as a strategy that has the potential to improve the quality of the overall learning process.

## **1. Research Methods**

This study uses a quantitative approach with a quasi-experimental design method. This approach was chosen because the researcher wanted to find out the effect or effectiveness of the application of active ice breaking on students' concentration in PJOK learning in a measurable manner. The design used is a "*pretest-posttest control group design*", which is a design that involves two groups, namely the experimental group that receives treatment in the form of active ice breaking and the control group



that undergoes PJOK learning as usual without the treatment. Both groups were measured in concentration levels before and after treatment to see any significant differences.

This research was carried out at SD IT Wahdah Islamiyah Gowa Regency, which is one of the public elementary schools that has routine PJOK activities and is representative enough to be the location of the research. The selection of this location is based on ease of access, support from the school, and suitability with the characteristics of the population studied, namely grade V elementary school students who are at the stage of concrete operational development and are prone to experiencing concentration disturbances in the learning process.

In this study, the intervention given to the experimental group was active ice breaking. Active ice breaking is a fun activity that involves light physical movements, carried out at the beginning of PJOK learning. Ice breaking is given before the learning starts, for 10–15 minutes, in 5 meetings. Some examples of ice breaking activities used in this study include:

- a) Tepuk fokus: Students follow the pattern of applause exemplified by the teacher.
- b) Gerakan cermin: Students imitate the movements of their friends in turn.
- c) Tebak gerakan: Students guess or imitate the movements demonstrated by the teacher.
- d) Color or figure jumping game: Students jump according to the teacher's instructions, practicing concentration and quick response.
- e) Quick Instructions: The teacher gives instructions such as “Sentuh lutut!” or “Putar badan!” randomly and quickly. Train focus and reaction.

This ice breaking activity was carried out by PJOK teachers who had been given directions by researchers. After the ice breaking was completed, PJOK learning continued as usual. As for the control group, PJOK learning was carried out without ice breaking activities, only directly to the core material.

### 1.1 Population and Research Sample

The research instrument used was a concentration observation sheet, which was developed based on learning concentration indicators according to aspects of educational psychology, such as: (1) the ability to pay attention to instructions, (2) the ability to maintain attention during activities, (3) the accuracy of responding to commands, and (4) the reduction of behavioral distractions during learning. Each indicator is rated on a Likert scale of 1–5, with higher scores indicating a better level of concentration. The validity of the content of this instrument was tested through expert judgement by three experts in PJOK and educational psychology, while its reliability was tested using Alpha Cronbach and obtained a  $>$  value of 0.75, indicating a high level of reliability.

The data collection technique is carried out through direct observation by two observers who have been trained to ensure objectivity and consistency. Each observer observed the students individually during the PJOK activities, both before and after the treatment. The data collected was then compiled and averaged to obtain each student's concentration score at two measurement times (pretest and posttest).

### 1.2 Research Instruments

The research instrument used was a concentration observation sheet, which was developed based on learning concentration indicators according to aspects of educational psychology, such as: (1) the ability to pay attention to instructions, (2) the ability to maintain attention during activities, (3) the accuracy of responding to commands, and (4) the reduction of behavioral distractions during learning. Each indicator is rated on a Likert scale of 1–5, with higher scores indicating a better level of concentration. The validity of the content of this instrument was tested through expert judgement by three experts in PJOK and educational psychology, while its reliability was tested using Alpha Cronbach and obtained a  $>$  value of 0.75, indicating a high level of reliability.

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### 1.3 Research Data Analysis

Data analysis was carried out with the help of statistical software (SPSS) using several statistical tests as follows:

- 1) A paired sample t-test to determine changes in concentration scores in a group (before and after treatment), and
- 2) Independent sample t-test to see the difference in posttest results between experimental and control groups.

The test was performed with a significance level of 5% ( $\alpha = 0.05$ ). The results of the test are the basis for concluding whether the application of active ice breaking has a significant effect on students' concentration in PJOK learning.

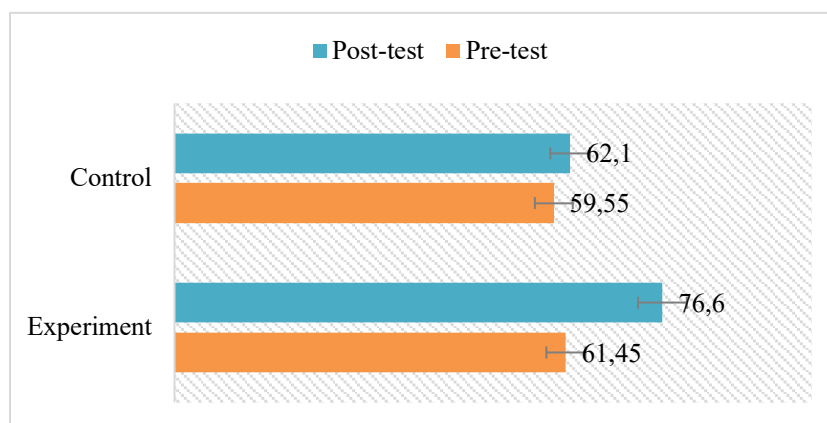
## 2. Results

### 2.1 Descriptive statistics

To obtain an initial picture of students' concentration ability in both groups (experiment and control), descriptive statistical analysis of pretest and posttest scores was conducted. These statistics include minimum, maximum, mean and standard deviation.

**Table 1. Summary of Descriptive Statistical Data of the Two Groups**

| Data Group |          | Min | Max | Mean  | Std. Deviation |
|------------|----------|-----|-----|-------|----------------|
| Experiment | Pretest  | 57  | 66  | 61.45 | 2.584          |
|            | Posttest | 70  | 83  | 76.60 | 3.560          |
| Control    | Pretest  | 56  | 63  | 59.55 | 1.849          |
|            | Posttest | 58  | 65  | 62.10 | 1.944          |



**Graphics 1. Average concentration level in each group**

From the results of the descriptive analysis, it can be seen that the average posttest score of students in the experimental group increased significantly from 61.45 to 76.60. Meanwhile, the control group experienced a relatively small increase, from an average of 59.55 to 62.10.



## 2.2 Paired Sampel Test

Paired t-tests are used to see if there is a significant difference between pretest and posttest scores in a group. These tests were performed on the experimental and control groups separately.

**Tabel 2. Summary of Paired Test Sample Data**

| Group                               | Mean Difference | Std. Deviation | Std. Error Mean | t     | Sig. (2-tailed) |
|-------------------------------------|-----------------|----------------|-----------------|-------|-----------------|
| Experiment<br>(Pretest vs Posttest) | 15.15           | 1.226          | 0.274           | 55.27 | 0.00            |
| Control<br>(Pretest vs Posttest)    | 2.55            | 0.510          | 0.114           | 22.34 | 0.01            |

The experimental group showed a very significant improvement, with an average difference of 15.15 and a value of  $t = 55.27$  ( $p < 0.001$ ). This means that the application of active ice breaking is very effective in increasing students' concentration during PJOK learning. The control group also improved, but much smaller (mean difference = 2.55;  $t = 22.34$ ), which was most likely due to routine learning factors without specific interventions. This suggests that the increased concentration in the experimental group was not solely due to time or habit, but rather due to the presence of active ice breaking treatments.

## 2.3 Independent Sampel Test

Paired t-tests are used to see if there is a significant difference between pretest and posttest scores in a group. These tests were performed on the experimental and control groups separately.

**Tabel 3. Summary of Independent Sample Test Data**

| Group                | t-test for Equality of Means |                 |                 | 95% Confidence Interval of the Difference |       |
|----------------------|------------------------------|-----------------|-----------------|---|-------|
|                      | t                            | Sig. (2-tailed) | Mean Difference | Lower                                     | Upper |
| Experimen vs Control | 0.00                         | 14.50           | 0.907           | 12.72                                     | 16.28 |

The results of the t-test showed a t-value of 15,987 with a significance of 0.000 (Sig. < 0.05). This shows that there was a very significant difference between the experimental group and the control group in the students' concentration posttest scores. The average difference in posttest scores between the two groups was 14.5 points, with a 95% confidence interval ranging from 12.72 to 16.28. Thus, it can be concluded that the application of active ice breaking has a significant effect on increasing students' concentration in PJOK learning.

## 3. Discussion

This study aims to determine the effectiveness of the application of active ice breaking as a strategy in maintaining and increasing the concentration of elementary school students during PJOK learning. The results of the study showed that the application of active ice breaking had a positive and significant effect on students' learning concentration. Students who participated in PJOK learning with active ice breaking interludes showed a higher increase in concentration than students who studied without the treatment. The increase in concentration in the treated group can be understood through an experiential and activity-based learning theory approach. Active ice breaking, which consists of light movement activities, short games, and social interactions, creates a fun learning atmosphere and is able to reactivate students' focus and energy. In PJOK learning that is full of physical activity, this strategy



is very appropriate because it helps the transition from passive to active activities in a fun and structured way. Students are more easily directed, show greater interest in learning, and are able to maintain attention during the learning session.

Psychologically, elementary school-age children are still at the stage of cognitive development which is greatly influenced by environmental stimuli, especially in the form of movement, sound, and social interaction (Nurmalitasari, 2015). Ice breaking actively answers these developmental needs because it not only stimulates motors, but also involves the emotional and social aspects of students (Apriyansyah & others, 2022; Hidayah & Philosophy, 2024). This makes them more mentally prepared to receive the subject matter and better able to control the distractions that often arise during learning. In practice, active ice breaking also provides an important cognitive pause time for students. When attention begins to decline, teachers can use ice breaking activities to reset students' concentration. This strategy has proven to be effective in preventing boredom and improving learning readiness, especially in the midst of lessons that last a long time. The classroom atmosphere becomes more lively, students seem more enthusiastic, and the level of activity increases overall. In terms of pedagogical approach, these findings show that PJOK teachers need to adopt a learning strategy that not only focuses on the material, but also pays attention to the psychological dynamics of students. Active ice breaking has been proven to be able to create a warmer, more humane, and fun learning climate. Students feel closer to their teachers and friends, so that they create a sense of security and comfort in learning. This has a direct impact on students' attitudes towards lessons, including the willingness to focus and follow instructions well.

In addition, the results of this study also show that simple strategies such as ice breaking can be a practical solution in learning without the need for complex additional resources. Teachers only need to design a few interactive activities that are easy to do in an open space or field, and these activities can be adapted to the age and character of the students. The ease of implementation is an added value in the implementation of an active ice breaking strategy as part of the PJOK learning routine. Although the results show a positive influence, this study certainly has limitations. The treatment was carried out in a relatively short time and at only one school, so the results could not be generalized widely. In addition, the concentration measurement instrument used is more observational, so it does not cover all cognitive aspects that may be related to student learning focus. Therefore, follow-up research with a wider scope, longer duration, and more diverse instruments is strongly encouraged to reinforce these findings.

Thus, it can be concluded that active ice breaking is a strategy that is not only functionally effective, but also pedagogically and psychologically relevant. This strategy can be used as part of PJOK learning innovations in elementary schools that aim to create a fun learning process while improving students' cognitive aspects, especially in terms of concentration. PJOK teachers are expected to be able to develop and integrate active ice breaking creatively into learning so that learning goals can be achieved optimally.

#### **4. Conclusion**

Based on the results of the research and discussions that have been conducted, it can be concluded that the application of active ice breaking has proven to be effective in maintaining and increasing the concentration of elementary school students in PJOK learning. Active ice breaking is carried out through simple movement activities, interactive games, and other fun activities that can create a more interesting learning atmosphere, refresh students' minds, and increase their readiness to receive learning materials. Students who participated in PJOK learning with the application of active ice breaking showed a more positive change in learning attitudes, more focused on following the teacher's instructions, and were better able to maintain attention during the activity than students who did not receive similar treatment. This shows that students' concentration can be improved through a fun approach that involves both physical and emotional aspects in a balanced way. Thus, active ice breaking can be used as a simple, practical, and effective alternative strategy to be applied regularly by PJOK



teachers in the learning process, especially to overcome boredom and maintain student involvement during learning. This strategy is also relevant to the developmental needs of elementary school-age children who require an active, varied, and fun learning environment.

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