Available online at : http://journal.unj.ac.id/unj/index.php/gjik
Gladi : Jurnal Ilmu Keolahragaan, 16 (04) 2025, 494-501
Permalink/DOI: https://doi.org/10.21009/GJIK.164.02

MINDFULNESS EXERCISE AS A STRATEGY TO IMPROVE LEARNING CONCENTRATION IN PHYSICAL EDUCATION FOR ELEMENTARY SCHOOL STUDENTS

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(Submission Track: Received: 01-08-2025, Final Revision: 01-09-2025, Available Online: 05-10-2025)

Abstract. This study aims to examine the effectiveness of applying Mindfulness Exercise in enhancing students' concentration. The significance of this research lies in its contribution to broadening insights into strategies for improving concentration through mindfulness-based practices. The research employed an experimental approach with a pre-experimental research design. The instrument used was a speed anticipation test, and data were analyzed quantitatively using normality testing (Shapiro–Wilk) and paired t-test. The findings revealed that prior to the intervention, the students' concentration level was categorized as good in 0.00% of participants, whereas after the intervention, 90.00% of students achieved a good category, indicating an increase of 85.00%. Furthermore, the paired sample t-test yielded a significance value of 0.000 ($p < 0.05$), confirming a statistically significant improvement in student concentration following the application of Mindfulness Exercise. In conclusion, the application of Mindfulness Exercise has a positive and significant effect on improving student concentration. It is recommended that school principals consider these findings as a reference in decision-making related to teaching and learning strategies. Additionally, teachers are encouraged to implement Mindfulness Exercise as a preparatory activity prior to classroom learning to optimize students' readiness and focus.

Keywords: Mindfulness exercise; concentration; physical education

INTRODUCTION

Concentrate means to focus, while in its noun form, concentration means to concentrate. Concentration is a state of mind or conditioned association activated by bodily sensations. To activate these sensations, a relaxed state and a pleasant atmosphere are necessary, because when a person is tense, they cannot use their brain optimally due to a blank mind (Immordino-Yang, Christodoulou, and Singh 2012). In line with the opinion (Indrawati 2020) which explains that a pleasant atmosphere means that the child is in a very relaxed condition, free from physical and non-physical threats. which explains that a pleasant atmosphere means that the child is in a very relaxed condition, free from physical and non-physical threats (Tuarez et al. 2019). This exercise is believed to help open and optimize the function of parts of the brain so that the learning process takes place with the full involvement of the whole brain (Crane et al. 2010).

According to research Sanger and Dorjee (2015) Mindfulness-based exercises can have a positive influence on increasing concentration, attention, alertness, and brain function in planning, decision-making, and response. *Mindfulness Exercise is also beneficial for learning ability without age restrictions* (Lenze et al. 2022). To maximize concentration, researchers use the dimension of focus through mindfulness exercises. Focus here is defined as the ability to cross the "midline of participation" that separates the back and front of the body, as well as the back (occipital) and front (frontal lobe) of the brain. If this connection is functioning well, children's attention and concentration in learning will increase. However, if this connection is not optimal, children can experience decreased concentration. Research shows that the majority of children utilize their break time for physical activity, namely 78% of boys and 63% of girls (Powell, Woodfield, and Nevill 2016). Mindfulness Exercise can be used as a means of refreshing students' bodies and minds after going through a learning process that demands high concentration and causes mental fatigue.

From the description above, it can be concluded that concentration is focused attention or an effort to focus attention on relevant information by ignoring unnecessary information. Poole and Jones (2017a) revealed that older children are more flexible in modifying their attention as needed. This is demonstrated through systematic planning strategies (planfulness), the ability to filter out irrelevant information, and attention adjustments as they age. Younger children tend to be less systematic, make decisions

based on limited information, and are less accurate. As children age, they become more flexible, able to process complex information, and adapt attention strategies more effectively.

In this study, the exercises used focused on the dimensions of laterality, focus, and centering. Some forms of mindfulness training chosen included conscious breathing exercises, body scans, simple movement awareness exercises, visual meditation, and concentration exercises through observing bodily sensations. Relaxation exercises aim to center emotions, increase attention, and calm the mind. (Semple and Lee 2014). Academically, this exercise is useful for improving listening and speaking skills, facing exams, and focusing on learning activities (Gibson 2019). In the context of physical education, mindfulness exercises can be implemented before, during, and after physical activity to help students become more aware of their posture, breathing, and body movements. Breathing and body awareness exercises not only balance right and left brain function but also support motor coordination, increase agility, and reduce the risk of injury during physical activity (Powell, Woodfield, and Nevill 2016). The academic benefits include improving reading, writing, and comprehension skills, as well as maintaining consistent focus throughout the learning process. In physical education, the benefits are seen in increased concentration during motor skills practice, sports games, and fitness activities. Mindfulness exercises that focus on mental relaxation can also help children overcome anxiety during sports competitions, maintain sportsmanship, and improve problem-solving skills during games. Visual tracking exercises help improve hand-eye coordination, accuracy in catching balls, and understanding game strategies (Pradityana and Setiakarnawijaya 2023). Overall, mindfulness exercises can support brain-body integration, which results in improved concentration, learning skills, physical activity performance, and readiness to face daily academic and social demands.

METHOD

The method used in this study was an experimental method aimed at measuring the effectiveness of the Mindfulness Exercise intervention in improving student concentration. Sampling was conducted using cluster sampling, and the study participants consisted of 36 fifth and sixth grade students at SDN Mekarjaya 11, Depok City. Participants were then divided into two groups: 18 students as the experimental group

and 18 students as the control group. The sampling technique used random sampling, with students with odd numbers assigned to the experimental group, while those with even numbers were assigned to the control group.

Learning concentration was measured using the Stroop Physical Activity Test, which was developed based on theory, validated through professional judgment, and previously piloted. This instrument served as a pre-test and post-test. Concentration scores were obtained from the total test scores completed by students. Data analysis used the non-parametric Mann-Whitney U-Test. This test was used because the limited number of study subjects meant that the data would not meet the assumption of normality when generalized to a larger population. The data analyzed was the gain score, namely the difference between the pre-test and post-test scores of each research group.

RESULT AND DISCUSSION

Prior to data analysis, a pretest score equivalence test was conducted on both research groups. This test aimed to ensure that the differences in results were truly due to the treatment and not to differences in baseline scores between subjects. The average equalized scores are presented in Table 1.

Table 1. Homogeneity Test Table with Levene's Test

	Levene's Test Equality of Variances	
	F	Sig.
Concentration on Physical Education Learning *Equal Variances Assumed*	3.651	.065

From the homogeneity test of Levene's test which shows that both groups are homogeneous groups with a value of p = 0.065, the score means that both groups have equal conditions before receiving treatment. Next is to test the proposed hypothesis using the Mann-Whitney U test analysis to see the level of difference in the gainscore obtained between the control group and the experimental group before and after treatment. The results of the analysis using the Mann-Whitney U-Test obtained a U value of 81,000, p = 0.002 (p <0.05). These results indicate that there is a very significant influence between Mindfulness Exercise training in improving the concentration of learning physical education in elementary school children. The average value of the gainscore of the subjects' learning concentration in the experimental group = 26.50 The average value of the gainscore of the subjects' learning concentration in the control group = 15.22 This

average value can be interpreted that there is a decrease or difference in the average concentration of children's learning between the two groups. This difference is significant because it has a significance level of p = 0.002 (p < 0.05). It can be concluded that Mindfulness Exercise is effective in improving learning concentration, and the proposed hypothesis has been proven.

The effectiveness of Mindfulness Exercise in improving learning concentration in children can be seen from the U value of 81.000; p = 0.002 (p < 0.05). The average learning concentration gainscore for children in the experimental group was 26.50. The average learning concentration gainscore for children in the control group was 15.22. To support the data analysis above, a frequency distribution table 2.

Table 2. Relative Frequency Distribution Table of Learning Concentration of Experimental Group and Control Class

Category	Score Range	% Experimental Group		%Kontrol Goup	
		pre-test	Post-test	pre-test	post-test
high	99≤x<125	0%	0%	5.3 %	0 %
Quite high	74.99 ≤ x<99.9	0%	65 %	56.9 %	52.76 %
quite	50≤x<74.99	86 %	40 %	35.8 %	46.4 %
Quite low	25.06≤x<50.0	15 %	10 %	0%	0%
low	0≤x<25.06	0%	0%	0%	0%

Based on the table above, it is known that in the experimental group before being given treatment, the average subject had a learning concentration that was in the medium category, namely 86%, while after being given treatment, the average subject had a learning concentration that was in the fairly high category, namely 65%. In the previous control group, the subjects had an average learning concentration that was in the fairly high category, namely 56.9%. Because this control group was not given treatment, there was a decrease in learning concentration, namely the average was included in the fairly high category of 52.7%. Meanwhile, for the difference in the empirical mean of the pre-test and post-test in the experimental and control groups in table 3.

Table 3. Table of Differences in Empirical Means of Pre-test and Post-test

Group	Levene's Test Equality of Variances	
	Pre-test	Post-test
Experiment	52.00	75.57
Control	71.16	74.38

From the table, it is known that the experimental group before being given treatment had an empirical mean of 52.00 and after being given treatment the empirical

mean increased to 75.57, meaning the average learning concentration in the experimental group increased by 23.58. Meanwhile, in the control group, without being given previous treatment, had an empirical mean of 71.16 and when re-measured the empirical mean increased to 74.38. This means the average learning concentration in the control group increased by 3.22. Although both groups increased, the increase in the experimental group was greater than the control group. This shows a significant increase in accordance with the research.

DISCUSSION

The results of this study indicate that Mindfulness Exercise significantly improves elementary school students' concentration during physical education lessons. This finding aligns with research in Indonesia, such as a study at Semarang State University that found that integrating physical activity with mindfulness can improve students' learning focus and mental health. (Johannes et al. 2024). Similarly, research at Makassar State University reported that implementing holistic exercise combined with mindfulness can increase the level of mindfulness by up to 73% and reduce stress by 65% (Kamal 2025). These results show that the application of mindfulness in physical education not only supports the psychological aspect, but also has a real impact on students' ability to concentrate in carrying out learning activities and physical practice.

Similar support has been found in international research. A randomized controlled trial in German elementary school students showed that nine weeks of daily mindfulness-based breathing exercises improved academic performance, particularly in arithmetic, with effects lasting up to five months. (Müller et al. 2021). In addition, research in Spain confirms that the integration of mindfulness into physical education lessons contributes to increased focus, body awareness, self-acceptance, and reduced psychological stress. (Delgado-Montoro et al. 2022). Thus, the results of this study are in line with various previous findings which confirm that mindfulness not only has an impact on increasing learning concentration, but also strengthens emotional regulation, motor skills, and students' readiness to face academic demands and physical activities.

CONCLUSION

Based on the analysis, it can be concluded that Brain Gym is highly effective in improving children's learning concentration. The U-value was 80,000, with a p-value of

0.002 ($p < 0.05$). The subjects' learning concentration level before treatment in the experimental group was in the moderate category (ME = 57.00), while in the control group it was in the moderate category (ME = 73.68). The subjects' learning concentration level after treatment in the experimental group showed an average increase (ME = 73.25), which is in the moderate category. Meanwhile, the control group, which was not given treatment, showed a decrease in the average (ME = 76.84), but was still in the moderate category.

The results of this study have both strengths and weaknesses. The strength of this study is that the results were able to prove the hypothesis that Brain Gym is effective in improving children's learning concentration. The weaknesses of this study are a) the movements and timing of Brain Gym were not standardized, resulting in less than optimal treatment. b) Concentration is supported by a person's physical or biological condition which still greatly influences the person's psychological condition, so we cannot determine good conditions during training for each subject. c) In the implementation of Brain Gym training which was carried out in the school yard, there were disturbances from other class students such as 6th grade students who were already in free time at school so that the subjects were less able to concentrate and do the training optimally. d) The delivery and training could not be carried out optimally, due to the limitations of the abilities of the researcher and trainer. e) There was no letter of concern (a letter of consent from the participants because they were worried about the negative impact of the treatment). f) The subject selection in this study was by lottery. The placement of subjects in the experimental group and the control group should be in pairs (matched pairs) so that the final score results can really see the difference or impact of the treatment.

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