



## **Efforts to Improve Learning Concentration and Learning Outcomes Through Extracurricular Activities of Wushu Sanda Sports for Junior High School Students**

**Lilis Maesaroh<sup>1✉</sup>, Muhamad Suma Wijaya<sup>2</sup>, Julinur Hafid<sup>3</sup>, Rifki Rosad<sup>4</sup>, Anisa Shopiani<sup>5</sup>, Adi Maulana Mahmud<sup>6</sup>**

Sports Coaching Education, Faculty of Teacher Training and Education, Sali Al-Aitaam University, Bandung, Indonesia<sup>135</sup>

Sport Education, Postgraduate School, Indonesia University of Education, Bandung, Indonesia<sup>246</sup>

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### **Abstract**

This study aims to examine the differences in learning concentration levels between students who participate in wushu sanda extracurricular sports and those who do not. The research method used is ex post facto with a causal design. The study was conducted at Sasana Bandung Fighter Academy (BFA) with a population of middle school students actively participating in BFA activities. The sampling technique used was total sampling, with 10 students as the research sample. The instrument for measuring concentration was the Grid Concentration Exercise. The results showed a significant difference in learning concentration levels between students who participated in extracurricular sports and those who did not, with a significance value of 0.000 ( $<0.05$ ). However, there was no significant difference in students' academic achievement, with a significance value of 0.137 ( $>0.05$ ). Overall, multivariate analysis indicated that students participating in extracurricular sports had better concentration levels than those who did not. Therefore, extracurricular sports play an important role in improving students' learning concentration.

### **How to Cite**

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✉ Correspondence address :  
E-mail: lilismh8@gmail.com

## INTRODUCTION

Education plays a crucial role in an individual's life as it enhances intelligence, skills, and shapes responsible, creative, and independent individuals. In the context of formal education, the success of the learning process is influenced by two main factors: internal and external factors. Internal factors include motivation, interest, talent, intelligence, attitude, and learning methods, while external factors encompass the environment, facilities, teachers, and curriculum. One of the critical aspects of learning success is students' concentration levels (Hidi & Renninger, 2019). Concentration refers to an individual's ability to focus on the information obtained during the learning process. Students with high concentration levels can absorb learning materials more effectively, whereas those with low concentration levels tend to struggle in understanding information.

However, in reality, not all students can focus optimally during classroom learning. Several factors affect students' concentration, one of which is physical condition (Mahmud et al., 2024). Various studies have shown that physical activity and sports positively contribute to concentration levels and academic achievement. According to a study by Kamnuron et al., (2020), physical fitness contributes 24.60% to children's concentration levels. Physical activity significantly influences physical fitness, concentration, and students' academic performance. Additionally, research by Ramadhan (2021) on cortisol hormone responses to anxiety and concentration revealed that students who engage in sports tend to have better concentration levels than those who do not.

One form of physical activity that can enhance learning concentration is through extracurricular sports activities (Yulianto & Hendrayana, 2022). Schools, as educational institutions, are responsible not only for improving academic performance but also for fostering students' potential through various non-academic activities, including extracurricular programs (I. Haris et al., 2023). Sports extracurricular activities provide students with opportunities to improve physical fitness, develop skills, and build discipline and teamwork (Manalu et al., 2024). One increasingly popular type of extracurricular sport is wushu sanda (Lei & Lv, 2022). Wushu sanda is a martial art that not only trains physical strength but also enhances concentration, mental resilience, and strategic thinking in facing opponents (Vasconcelos et al., 2024).

This study focuses on junior high school students participating in the wushu sanda extracurricular program at Sasana Bandung Fighter Academy (BFA). With structured training schedules ranging from once to three times a week and a well-planned training regimen, this extracurricular activity is expected to have a positive impact on students' physical fitness, concentration levels, and academic performance (Wang et al., 2022). Initial observations indicate that students actively engaged in sports tend to have better physical endurance, greater focus in learning, and improved discipline in managing their time between academics and extracurricular activities (Liang & Samahito, 2024).

In recent developments, research has shown that martial arts training such as wushu sanda not only improves physical fitness but also has a significant impact on cognitive function, including concentration and memory. A study by Wang et al (2022) found that martial arts can increase brain wave activity related to focus and decision-making. In addition, Revealed that regular martial arts training contributes to increased emotional control and stress management, which directly impacts the quality of students' learning (Liang & Samahito, 2024).

Furthermore, in the context of education, a holistic approach to learning is gaining more attention. The concept of "embodied learning", which is learning that integrates physical movement with cognitive processes, has been shown to improve information retention and better understanding of concepts (Lyu & Deng, 2024). Wushu sanda, as a sport that relies on a combination of body coordination, quick thinking strategies, and mental resilience, can be an effective form of movement-based learning for students.

In addition to cognitive benefits, recent research also shows that involvement in structured sports activities can improve students' social skills. According to a study by Mustari & Rahman (2014), participation in martial arts helps students build leadership skills, teamwork, and higher self-confidence, all of which contribute to their academic success and personal development. Thus, the integration of wushu sanda into school extracurricular activities can have a broader impact, not only on academic concentration and achievement but also in shaping students' characters to be more disciplined and resilient.

Based on these recent findings, this study will also explore how psychological aspects such as stress management and emotion regulation developed through wushu sanda can contribute to improving students' learning concentration and

academic outcomes. By adding this dimension, it is hoped that this study can provide deeper insights into the role of martial arts in supporting holistic education for students at the junior high school level.

Based on literature reviews and preliminary observations, this research aims to examine whether there is a significant difference in concentration levels and learning outcomes between students who participate in the wushu sanda extracurricular program and those who do not. The research questions formulated in this study are: 1. Is there a difference in learning concentration levels between students who participate in the wushu sanda extracurricular program and those who do not? 2. Is there a difference in learning outcomes between students who participate in the wushu sanda extracurricular program and those who do not?

Through this research, a deeper understanding of the role of extracurricular sports activities in improving students' concentration and academic achievement can be obtained. Furthermore, this study aims to provide recommendations for schools in developing more effective extracurricular programs that benefit both students' academic and non-academic development.

## METHODS

The method applied in this research is ex post facto. The research design used is a causal design. This study was conducted at Sasana Bandung Fighter Academy (BFA). The population in this study consists of middle school students who are active members of Sasana Bandung Fighter Academy (BFA). Based on the available data, there are 10 students participating in the wushu sanda extracurricular sports program. The sampling technique used is total sampling.

In this study, the researcher used an instrument to measure concentration, namely the Grid module, adopted from D. V Haris & Harris (1984). Data analysis tests included normality tests, homogeneity tests, and hypothesis testing.

## RESULTS AND DISCUSSION

This study examines differences in concentration levels and academic performance between students participating in Wushu Sanda sports extracurricular activities and those in non-sports extracurriculars. Conducted on 20 junior high school students (7 from grade VII, 9 from grade VIII, and 4 from grade IX), the research lasted four weeks. The first week involved school permission, extracurricular observation, and coach interviews. The second week focused on a concentration test, while the third and fourth weeks collected academic performance data from teachers.

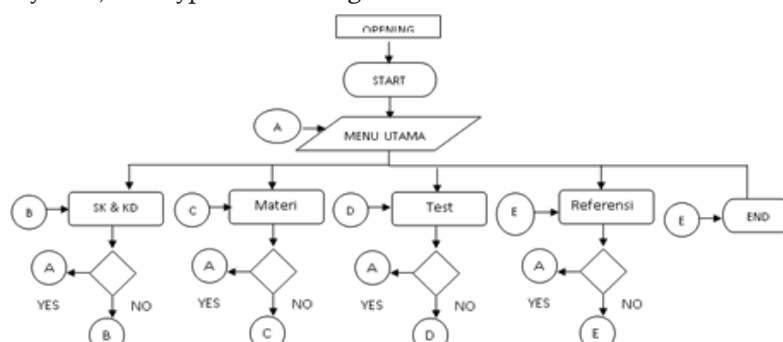
Concentration levels were measured using the Concentration Grid Exercise, administered 20 minutes into class to ensure students had engaged in learning. Research by Ruijter & Utomo (1983) supports this timing, noting that attention significantly drops after 20 minutes without a break. Academic performance was assessed through report card scores accumulated over multiple semesters. The concentration test required students to connect numbers from 0 to 99 within a 100-cell grid in one minute, evaluating focus and cognitive ability.

The analysis used in this study is the T-test. The T-test used is the independent sample t-test, this is done because the researcher will compare the average of the two groups used as samples in this study.

**Table 1.** Hypothesis Test Results of Concentration Level Values

Description	Score
t Start	5,5934
t critical one-tail	1,6515

Based on **Table 1** in hypothesis testing for concentration level value, the calculated t value is 5.5934 and the table t value is 1.6515. From the values obtained, the calculated t value is greater than the table t (calculated  $t > t$  table). So based



**Figure 1.** Flowchart learning Android-based mobile applications.

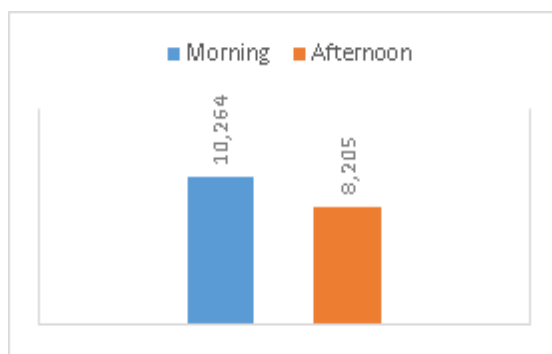
on these results the hypothesis is accepted ( $H_a 1$  is accepted). This means that the concentration level of students who participate in sports extracurricular activities is better than students who participate in non-sports extracurricular activities. This can also be seen from the average concentration level value of students who participate in sports extracurricular activities is greater than those who participate in non-sports extracurricular activities.

**Table 2.** Results of Hypothesis Testing of Learning Outcome Values

Description	Score
t Start	8,7517
t critical one-tail	1,6515

Based on **Table 2** in the hypothesis testing for the learning outcome value, the calculated t value is 8.7517 and the t table is 1.6515. From the values that have been obtained, the calculated t value is greater than the t table (calculated  $t > t$  table). So based on these results the hypothesis is accepted  $H_a 2$  is accepted This can also be seen from the learning outcome value of students who participate in sports extracurricular activities which are greater than those who participate in non-sports extracurricular activities.

The level of student concentration can be seen from the concentration level value after a concentration test is conducted in learning on each student who follows learning in the morning and afternoon. The average value of the concentration level can be explained in **Graph 1**.



**Graph 1.** Concentration Level of Sports and Non-sports Extracurricular Students

In **Graph 1** explains the level of concentration of students who participate in sports extracurricular activities with students who participate in non-sports extracurricular activities. The average concentration value of students who participate in sports extracurricular activities is 10.264

and the average concentration value of students who participate in non-sports extracurricular activities is 8.205. Based on the graph, it is known that the level of concentration of students who participate in sports extracurricular activities is better than students who participate in non-sports extracurricular activities.

Sports and non-sports extracurricular activities serve as a platform for students to develop character and complement intramural activities. Extracurricular activities take place outside of regular school hours, usually after classroom learning, allowing students to utilize their free time in a positive manner (Wijaya et al., 2023). Sports extracurricular activities are expected to help students become healthier and fitter, making them less susceptible to viruses and diseases (Kirey et al., 2024). Additionally, these activities are anticipated to produce young athletes who can represent their schools in regional and provincial sports competitions.

Given the importance of extracurricular activities in schools, their implementation should be optimized to explore students' potential. One of the most significant extracurricular programs is in the field of sports (Singla et al., 2020). Sports extracurricular activities contribute to students' physical fitness and overall well-being. A healthy and physically fit condition enhances students' concentration during classroom learning (Wijaya, 2022). This aligns with research conducted by Rismayanthi (2012), which states that physical fitness significantly contributes to academic achievement and students' concentration levels.

## CONCLUSION

This study confirms that participation in sports extracurricular activities, particularly wushu sanda, positively impacts students' concentration and academic performance. The hypothesis test results show that students involved in sports activities have significantly higher concentration levels ( $t = 5.5934 > 1.6515$ ) and better learning outcomes ( $t = 8.7517 > 1.6515$ ) than those in non-sports activities. These findings highlight the importance of integrating sports programs in schools to enhance both cognitive and academic development.

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