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Comparison of Physical Fitness and Learning Motivation in Nature School Students and Regular School Students

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ABSTRACT

This study aimed to determine whether there were differences in academic achievement, physical fitness, learning motivation, and motor skills between nature school students and regular school students. In this study, the author used ex post facto research with a comparative type, which was intended to find fundamental answers about cause and effect by analyzing the factors that caused the problem. This study's population were students from nature schools in Bandung and students from Sukajadi 9 Elementary School in Bandung. In this study, the researcher used purposive sampling to take samples with certain criteria and considerations, namely class VI, which had 15 people from nature schools, and class VI, which had 15 students from regular schools. The results of this study used hypothesis testing calculations using the t-test with one shoot design. Based on the hypothesis test results, there were significant differences between academic achievement, physical fitness, learning motivation, and motor skills in nature schools and regular schools.

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1. INTRODUCTION

The educational process is a mechanism for developing knowledge, character, and behaviour and character. Usually, the implementation of education is in schools that the government has prepared. Schools are a means for teaching and learning activities, guiding, directing, and educating so students who study at the school can learn well and succeed. Education has become important in society [1]. Education is an effort carried out in a structured and logical manner aimed at fostering and building someone into a more

mature person so that they can make wise decisions and impact the need for education in society. Empirically, education in Indonesia has experienced a degradation in the meaning of educational values [2]. There needs to be a breakthrough or innovation in Indonesia's education world that can provide students enlightenment. Education that is more open-focused and does not only discuss technical matters of science but also provides inspiring and more focused stimulation. Different characteristics of the diversity of students are both horizontal (the difference in class) and vertical (grade level difference) so that students can do activities with pleasure according to their ability [3].

The natural environment constitutes a collection of components that determine adequate recreational and sporting activities, whether treated individually or as a cohesive whole [4]. Concerning the increasingly widespread education and society's increasing need for education, many alternative schools can now provide education equal to or even better than existing formal schools. The tendency to grow and the proliferation of alternative schools is based on several possibilities, including the increasing need for an economic life that is difficult to reach and increasing public awareness of the need for education that can support equipping their children according to their needs and aspirations. Among them are nature schools, which are considered to be a good alternative for students. Maryati [5] explains that *Sekolah Alam* (SA) is a school with an educational concept based on the universe. The SA environment feels truly natural, with school buildings that are only stilt houses commonly called *saung*, surrounded by various fruit, vegetable, and flower gardens and even livestock areas. Not the atmosphere of a multi-story and magnificent building as a classroom. Tensions in the forest also clearly existed as educators and researchers. Harwood and Collier [6] said they problematized the viewpoint of ‘‘innocent child and ‘pure’ nature in early childhood education.’’. Children who consistently played in nature during recess performed better in motor skills tests than children who played on traditional playgrounds and showed improved motor fitness [7].

The alternative school is learning that involves the environment as a learning resource for students other than in the classroom. This alternative school is a good design when the need for formal schools increases and no longer follows the community's capabilities [8]. Alternative schools are outdoor education programs within a school district that involve more than logistics; they require a belief that teachers and students should have the opportunity to experience teaching and learn outdoors and that this setting offers positive benefits to those involved [9]. Alternative schools have several advantages, such as natural schools. The learning process is centred in one place and uses open fields and the surrounding natural conditions. The learning process is centred on the existing curriculum for regular or ordinary schools. Movement activities are only limited to physical education and practice lessons with limited time and a narrow place fenced with walls and fences. According to Mudzakir [2], one of the pioneers of nature schools, Nature is one form of alternative education that uses nature as the main media for learning for its students.

Nature school is an alternative for those who want change in the world of education. It is expected that the existence of nature school alternatives will change not only the system and learning targets but also the educational paradigm, leading to

improvements in education quality and results. Because early humans spent over 99.99% of that time living in a natural environment [10]. If we define the beginning of urbanization as the rise of the Industrial Revolution, less than 0.01% of our species' history has been spent in modern surroundings. The gap between natural settings, to which our physiological functions are best adapted, and the highly urbanized and artificial environment we inhabit is a contributing cause of the "stress state" in modern people.

The application of learning theory in nature schools implements experiential education or "learning by doing," which allows students in schools to relate lessons to daily activities in the surrounding environment. Student activity in nature schools is quite high; children not only learn in class, but they learn from anywhere and from anyone. Besides learning from books, children also learn from the surrounding nature. According to Dabaja, outdoor activities, especially in nature, could help improve individuals' overall well-being [11].

Nature schools use an adventure-education approach in their physical education program approach. According to Adang [12], the "Adventure-education approach emphasizes more risky adventure activities in a more natural environment (e.g., mountain climbing, cross country, camping)".

According to Santoso [13], physical fitness is: "The degree of dynamic health of a person, which is the basic physical ability to carry out the tasks that must be carried out". Therefore, every student must try to be fit in their daily lives to carry out the activities given. By seeing how much activity or movement tasks are given to students in each school, we can see how much movement ability and endurance are to carry out the tasks given. If the condition is good, students will be able to carry out the movement tasks given well and get maximum results, so their learning achievements and academic achievements will increase. In line with that, Grissom [14] stated that The purpose of this paper is not to argue for or against the value of physical education in improving academic performance. The advantages of organized physical activity for overall health are most likely far greater than those for academic performance. However, a demonstrated link between academic success and physical fitness could be used as justification to maintain, expand, and possibly even enhance physical education programs when administrators and policymakers must make tough choices about allocating resources in an academic accountability environment.

From the above opinion, it is clear that physical education programs must be improved and organized well because there will be many benefits for physical health and academic achievement. Vera [15] states how the benefits of outdoor lessons are: a) Encourage learning motivation, b) Sharpen physical activity and creativity. c) A pleasant learning atmosphere. d) Use of concrete learning media. e) Use of basic skills, f) Mastery of social skills, g) Develop an independent attitude, h) Permanent learning outcomes in the brain (not easily forgotten), i) Does not require equipment, j) Intellectual skills, k) Closer emotional relationships between teachers and students, l) Meaningful learning.

According to this opinion, the first benefit of learning in nature is motivational encouragement. Because this activity uses natural settings as its learning media, students can learn without the limitations of space that can cause boredom, slums, and saturation, so

they are more enthusiastic about learning, according to Mc.Donald [16] said that motivation is A shift in someone's mental state that manifests as affective (feelings) and behaviours to accomplish objectives. Individuals may experience changes in their energy levels through actual physical activities.

A person is highly motivated to put up all his efforts to accomplish his actions simply because he has a goal. People who are motivated to study will listen carefully to the lessons being taught, read the content to gain an understanding of it and employ specific learning techniques to help them retain it. Additionally, students are highly engaged in the learning process, exhibit a high level of curiosity, seek out relevant resources to comprehend a subject and do the assigned tasks.

2. METHOD

This study employed a quantitative comparative research design using an ex post facto approach. Ex-post facto research is done on programs, activities, or events that have already occurred or happened [17]. In this study, the author uses Ex-post Facto research with a comparative type, which is intended to find fundamental answers about cause and effect by analyzing the factors that cause the problem. Ex-post facto research looks at cause-and-effect linkages that the researcher does not alter or handle. This method is under the research that the author will conduct, namely to reveal the physical fitness and learning motivation of students in nature schools with students in regular schools. The objective was to compare the physical fitness and learning motivation of students enrolled in a nature-based school with those attending a conventional public school.

Table 1. Ex-post facto research design

Group	Variabel Independen	Variable Dependent
I	Nature School (SA)	Physical Fitness & Learning Motivation
II	Regular school	Physical Fitness & Learning Motivation

Population and Sample

The population in this study comprised sixth-grade students from nature schools in Bandung and sixth-grade students from Sukajadi 9 Elementary School, a regular public school also located in Bandung. The sample was selected using purposive sampling, with specific criteria and considerations, including grade level (class VI) and accessibility.

A total of 30 students participated in this study, comprising 15 students from nature schools and 15 from regular schools. All participants were in the same grade level, had comparable age ranges (approximately 11–12 years old), and had no physical limitations that would affect the physical fitness tests.

Data Collection Instruments

Data on physical fitness were obtained using the Indonesian Physical Fitness Test (Tes Kesegaran Jasmani Indonesia – TKJI), which includes components such as a 60-meter sprint, sit-ups, push-ups, vertical jump, and a 1,200-meter run. This test is standardized and

widely used by Indonesia's Ministry of Youth and Sports.

The Learning motivation questionnaire with the Guttman scale model and Indonesian physical fitness test tool (TKJI). To assess learning motivation, a structured questionnaire was used. The instrument was adapted from previously validated tools and measured four key indicators: attention, relevance, confidence, and satisfaction (based on Keller's ARCS Model of Motivation) [18]. First principles of motivation to learn and e3-learning. Four categories/aspects represent Attention, relevance, self-confidence, and satisfaction. Then, take one aspect from Maslow [19], who described the following basic human needs (self-actualization), and one aspect from Weinberg [20].

Data Analysis

The collected data were analyzed using independent sample t-tests to determine whether the two groups had significant differences in physical fitness and learning motivation. Before hypothesis testing, tests for normality and homogeneity of variance were conducted to ensure that assumptions for parametric tests were satisfied. All analyses were performed using SPSS version 25 with a significance level set at $\alpha = 0.05$.

3. RESULTS AND DISCUSSION

3.1 Results

The data obtained in Figure 1 below is based on the research results.

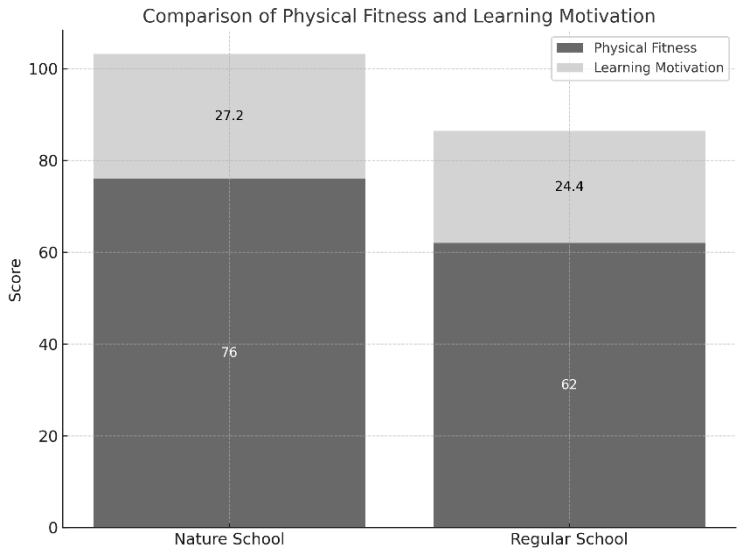

Figure 1. Comparison of learning motivation and physical fitness between nature schools and regular schools

Figure 1 presents a comparative visualization of physical fitness and learning motivation scores between students from nature schools and those from regular schools. The data show that nature school students outperformed regular students in both aspects. Specifically, nature school students' average physical fitness score reached 76, while regular school students scored 62. Regarding learning motivation, nature school students obtained a higher average score of 27.2, compared to 24.4 from their regular school counterparts. This suggests that the learning environment in nature schools, which

emphasizes outdoor, experiential, and physically engaging activities, may contribute positively to students' physical well-being and their intrinsic motivation to learn. The combined scores further highlight that nature school students achieved 103.2, significantly higher than the 86.4 recorded for regular school students, indicating a more holistic developmental impact.

Table 2. Physical fitness test results

T	t-test. *Sig.*	*Results*	*Conclusion*
3,578	0,001	H_o Rejected	between Significant

It can be seen that the value in Table 2 above is t value = 2.888, p = 0.007 < 0.05, so Ho is rejected, or there is a significant (real) difference that natural schools are better than regular schools.

Table 3. Learning motivation test results

T	t-test. *Sig.*	*Results*	*Conclusion*
2,888	0,007	H_o Rejected	between Significant

It can be seen that the value in Table 3 above is t value = 2.311 p = 0.007 < 0.05, so Ho is rejected or the physical fitness and learning motivation of nature schools are better than regular schools.

The statistical analysis using independent sample t-tests revealed significant differences between nature and regular school students in both physical fitness and learning motivation. As shown in Table 1, the t-value for physical fitness was 3.578, with a significance value (p) of 0.001, which is below the 0.05 threshold. This result indicates that the null hypothesis (Ho) is rejected, meaning the two groups have a statistically significant difference in physical fitness. Nature school students demonstrated significantly higher physical fitness levels than regular school students. Similarly, Table 2 shows the results for learning motivation, where the t-value was 2.888 with a p-value of 0.007, also below 0.05. This confirms a significant difference in learning motivation, again favouring nature school students. These findings support the conclusion that the outdoor, experiential learning environment characteristic of nature schools has a measurable positive impact on both students' physical development and motivational engagement in learning.

3.2 Discussion

As stated in the background, this study aims to determine fitness and learning motivation in two schools and compare them in two different schools. In the study, two aspects can affect the differences: physical fitness and learning motivation. The following are the findings of the author's research results, including:

3.2.1 The physical fitness of nature school students is better compared to regular school students.

The difference in physical fitness in nature schools can be caused by applying different learning theories, which emphasize active learning, namely active learning and

learning from experience, so that students in nature schools move more and sweat, thus stimulating physical fitness. Student fitness is formed and maintained by physical education such as hiking, nature exploration, outbound, and other lessons such as farming, gardening, and many other practical materials. According to Carlson et al. [21], the results of his research on physical fitness and academic achievement revealed that the numerous advantages of physical education should be emphasized, and cutting back on or doing away with physical education programs does not seem to be justified by concerns that it will have a detrimental impact on academic performance. In addition to providing children with a well-rounded academic program that incorporates chances for physical activity, schools should work to fulfil the national health aim of daily physical education.

This is supported by the results of the independent sample t-test in Table 2, which showed a t-value of 3.578 and a significance value of $p = 0.001$ (< 0.05), indicating that there is a statistically significant difference in physical fitness between students in nature schools and those in regular schools.

Based on the study results above, the author concludes that physical fitness in nature schools can be obtained from daily activities and physical education activities that greatly help students in physical fitness. Physical programs indirectly increase fitness and can affect academic achievement, and there is no reason for schools not to eliminate physical education programs because schools must meet national fitness standards so that students are healthy with physical activities. Then, the results of Grissom [22] discovered that "The results show a consistent positive correlation between academic achievement and overall fitness." In other words, mean accomplishment scores increased along with total fitness scores, and then indirectly, nature schools with various physical activities obtained every day can improve their physical fitness and academic achievement.

These findings are consistent with the graphical data in Figure 1, which illustrates that nature school students scored an average of 76 in physical fitness, significantly higher than the 62 scored by regular school students.

3.2.2 The learning motivation of nature school students is better than that of regular school students.

There are interesting things in the learning provided with environmental facilities that can attract their attention in learning, according to Vera [15]: The first advantage of teaching and learning activities outside the classroom is to encourage teaching and learning motivation to students, the motivation to learn arises because this activity uses an open natural setting and students can learn without the limitations of space that can make them bored, dirty, and bored. Specifically, studies on school or curriculum-based outdoor learning programs have reported numerous positive effects, including improved concentration, prosocial behaviour, increased student engagement, psychological well-being, and self-determination [23]. Empirical data from this study reinforce these claims, as shown in Table 2, where the t-value was 2.888, and the p-value was 0.007 (< 0.05), confirming a statistically significant difference in learning motivation between the two groups.

This can provide full support for the learning process as a whole and can add

aspects of joy and pleasure for students so that it is possible for students to absorb learning well so that their academic achievement increases. Parkin [24] stated that Programs for outdoor education can often have various goals. Depending on the program's goals, these goals may centre on intellectual, social, or physical outcomes or any mix. Programs for environmental education could also have a similar set of goals. However, participants in an outdoor education program are not required to learn about the environment or environmental ideas. The research that CAAN has done shows that for most sports – the increase in participation [25]. All of the opinions above can also be a good and harmonious foundation for determining other findings, and automatically, the author can see the differences between the two schools.

Furthermore, Figure 1 illustrates this difference visually, with nature school students achieving a motivation score of 27.2, compared to 24.4 among regular school students. These results indicate that outdoor-based education fosters physical fitness and cultivates a higher degree of learning engagement and intrinsic motivation.

4 CONCLUSION

Based on the data processing and analysis results through statistical procedures described in the previous chapter, the author can conclude from the study results. This is based on several facts and existing data that the author obtained in the field. The conclusion is: "The academic achievement of nature schools is better than regular schools". This conclusion is following the author's submission in the previous chapter, namely:

a. There is an influence on the level of physical fitness of nature school students and regular school students.
b. There is an influence on the level of learning motivation of nature school students and regular school students.

Researchers have found that children who often do outdoor activities or often do activities in nature will be healthier and fitter than children who have limited movement. Besides that, researchers have also found that utilizing learning facilities in nature or learning directly in the field will increase their learning motivation because children still have considerable curiosity and exploration of the world.

For further researchers, it can be suggested to conduct further research related to other problems, such as whether the increase in learning motivation can also impact learning outcomes.

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