



Effect of Different Play-based Learning Approach and Anxiety towards Learning Free Style Swimming

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Article Info	Abstract
<p>Article History :</p> <p>Received : September 2024</p> <p>Revised : February 2025</p> <p>Accepted : February 2025</p> <hr/> <p>–</p> <p>Keywords:</p> <p>Play-based learning, anxiety, learning outcome, free style swimming</p>	<p>This study aims to determine: 1) the difference between play-based learning approaches using tools and peers in improving free style learning outcomes; 2) differences in free style learning outcomes among those with high, medium, and low levels of anxiety; 3) the significance from the interaction between play-based learning approach using tools and peers and level of anxiety towards learning results. This research uses an experiment method with 2 x 3 factorial design. Population of this study consists of 4th elementary school students in Barat District with 48 students as samples. Data is collected through tests and measuring. RCMAS (The Revised Children's Manifest Anxiety Scale) is used to measure anxiety. Results from the anxiety measurement are used to group/categorize: (1) samples with high anxiety; (2) moderate anxiety; and (3) low anxiety. Data is collected through measuring the distance reached by students in a post test. Then, data is analyzed by using 2-way ANOVA and Scheffe's method with 5% significance. This research concluded that: 1) there is significant impact in the usage of tools and peers in improving free style learning outcome; 2) there is a notable difference in learning outcome among students with varying levels of anxiety; 3) there is no significance from the interaction between tool and peer-based learning and level of anxiety towards learning outcome.</p>



INTRODUCTION

Physical education is an educational process that utilizes physical activities to produce holistic changes in individual quality, including physical, mental, and emotional quality. Physical education considers a person as a unity, a whole being, instead of considering the physical and mental quality separately (Alif & Sudirjo, 2019) . Mulyana & Lutan (2021) also state that Physical education is a learning process for body movement and studying through the movements. Besides, physical education wants to realize its contribution to balanced children's development through learning (Rahayu, 2016) . Physical education gives a comprehensive development of a person because it does develop not only skilled physical movements and physical fitness aspects (field physical and psychomotor), but also plays a role in cognitive and affective aspect development (Lengkana & Sofa, 2017) .

Physical education as a subsystem in education has a significant role in developing the quality of Indonesian people; therefore, physical education is a subject (field of study) that exists at every level of education, including elementary school(Lengkana & Sofa, 2017) . The scope of physical education in elementary school, according to BSNP 2010 in School-Based, has several aspects, namely : (1) games, and sports (2) developmental activities, (3) rhythmic activities, (4) gymnastics activities, (5) outdoor learning activities, (6) water activities, (7) health education. The standard competencies of water activity include games in the water, water safety, skilled movements, swimming, and other activities.

One of the water activities in physical education is swimming(Prawira et al., 2021) . The standard competence for swimming is different for each grade, with students from grades 1-3 having water introduction and students from grades 3-6

starting to learn swimming styles. Under the curriculum, the first thing that is taught in swimming class is the free style. (Badruzaman et al., nd) stated that swimming is an effort to float or lift the body to the top of the water's surface. More specifically, swimming is a method by someone (animal) to move their body in the water. (Badruzaman et al., nd) stated that swimming is an effort to float or lift the body to the top of water surface. More specifically, swimming is a method done by someone (animal) to move their body in the water (Arifin, 2013) . Swimming is more popular as a recreational activity like on the beach, lake, or natural river. Swimming is a branch of sport with many benefits. Aside from being beneficial for the body, it can also serve self-safety for other people when swimming. So, it can be said that swimming is a good sport to be mastered by children due to its many benefits.

Through swimming, children can have a chance to know and understand their environment (Suharto, 2017) . They also get the opportunity to move their body freely. While swimming, they have no choice but to move their whole body to stay afloat. This freedom is very stimulating, not only from a physical aspect but also a psychological aspect. Swimming has values that cover a broad scope for children, such as building courage, self-reliance, and confidence (Sungkowo et al., 2021) . Besides, mastery in swimming can bring an unseen joy that is not found in other physical activities. As swimming has many benefits for children, it is essential to teach them not to be afraid of the water, to brace themselves while entering the pool, and be eager to learn to swim.

Based on the survey result of 15 elementary schools in Barat district, Magetan Regency, eight elementary schools have not taught swimming for several reasons: (1) no supporting

infrastructure, (2) time limitation, (3) cost limitations, (4) have not found the right approach for learning swimming, (5) students like to play alone when they are in the swimming pool and unwilling to study the actual swimming. From the survey conducted on the 4th-grade elementary school in Barat district, out of 158 students, 150 students cannot do free style; therefore, the percentage of success with free style learning for elementary school students in Barat district is 8 of 158 students or 5.06%. One school has used a play-based approach to resolve a student's fear while entering the pool; however, it is given too late because it should already be given in grades 1-3, but instead, water introduction is given in grade 4. Something else is needed for the child's development and the existing curriculum.

Learning swimming needs a certain courage which is different from other sports, so children who cannot swim usually feel worried and afraid to learn to swim (Kusumadewi et al., 2021) . The children's world is identical to playing, so it needs a play-based learning approach that is innovative and more varied so it can spark their interest in swimming. Play-based learning approach uses helping tools and help from friends to spark interest and, eventually, success in learning swimming. These two approaches allow students to swim with free style without knowingly learning it. To support free style learning, several factors must be noticed, such as the anxiety level of elementary school students. Anxiety is a state of negative emotion noted by feeling nervous, anxious, and fearful, which is connected with the activity or arousal in the body(Suharto, 2017; Virginia, 2020) . Anxiety factors must be noticed, especially for children who want to learn swimming because this factor can influence their appearance and even hinder the learning process of free style.

METHODS

The method used in this study is experimental method using factorial 2 x 3 framework. According to Sudjana (2005) , experimental factorial is a framework that combines or crosses most or all levels of other available factorials in the experiment.

Participant

The population in this study is fourth-grade elementary school students in Barat district. The sample in this study uses a purposive random sampling technique. The data of fourth-grade elementary school students in Barat District, Magetan Regency, is obtained from a physical education teacher. Among 158 students, the population 150 students cannot do free style. Therefore, the anxiety test will be conducted on those 150 male and female students to obtain a sample of high, moderate, or low anxiety levels. After the test is conducted, 30% of the population is taken with high, moderate, or low physical anxiety level results, so the sample consists of 45 students, with three students as an alternative, so the total sample is 48 male and female students with high, moderate, and low anxiety level.

Material

The instrument of this study is a test to determine the result of free style learning with point work test that covers psychomotor realm (process and product) by observation method with observation test sheet. Students are asked to swim in accordance with the swimming style learned by each student. This practice is in accordance to a book titled *Belajar Cepat Pendidikan Jasmani dan Kesehatan untuk Sekolah Dasar* compiled by Samsudin and printed on 2008, while the assessment used is the swimming distance achieved in the *post test* conducted to the students. The

tests consists of an underwater start (in the water) and swimming in accordance to what they have learned, with the maximum distance of 25 meters. The tool to measure anxiety level uses RCMAS (The Revised Children's Manifest Anxiety Scale) composed of 37 items to measure the anxiety level of children aged 6-19 years. This instrument is developed by Reonolds and Richmond (1978). RCMAS has good reliability (Pearson correlation 0.60 - 0.88 , significant at $p \leq 0.05$)

Procedure

The first step in a study is determining the research sample, which consists of 48 students. This sample is further grouped in ordinal pairing for the share group. 24 students with high, moderate, and low anxiety levels do play-based learning using helping tools, while the other 24 use a friend's help. This sample of 48 students was then grouped in accordance with the factorial 2 x 3 design into six groups, where every group consisted of 8 children. The groupings for the sample are eight students as a part of a play-based learning group using helping tools with high anxiety level, eight students as a part of a play-based learning group using helping tools with moderate anxiety level, eight students as a part of play-based learning group using helping tools with low anxiety level, eight students as a part of play-based learning group using friend's help with high anxiety level, eight students as a part of play-based learning group using friend's help with moderate anxiety level, and eight students as a part of play-based learning group using friend's help with low anxiety level.

The next step is to give treatment on the learning approach groups with helping tools and friends' help. After that, the result can be seen by conducting a *post-test* for free style.

Data Analysis

The technique of data analysis used is two track variant analysis technique (ANAVA) The analysis of significance is followed by hewman-keuls raange test (Sudjana , 2004:36). To fulfill the assumption in ANAVA technique, the normality test (Test *lilliefors*) and Homogeneity Variance test (using *Bartlett* test) are conducted (Sudjana , 2002:261-264).

RESULT

The data analysis description of the result of free style learning based on the compared groups is shown as follows.

Learning approach	Anxiety	Information	Freestyle Learning Result
Helping tools	High	Amount	548.11
		Average	77.81
		SD	12.01
	Moderate	Amount	638.11
		Average	78.30
		SD	6.10
	Low	Amount	656.23
		Average	82.03
		SD	7.73
Friend's help	High	Amount	416.11
		Average	59.67
		SD	7.75
	Moderate	Amount	521.61
		Average	64.87
		SD	3.91
	Low	Amount	585.98
		Average	73.25
		SD	11.27

Each cell (treatment group) has different result of free swimming learning. The average score of the swimming learning result of each cell (treatment group) can be seen on the following table:

DISCUSSION

No	Treatment Group (Cell)	Average End Result	The discussion of this study is to give a clear interpretation of the data analysis result mentioned beforehand. Based on hypothesis testing, it results in two groups of conclusion analysis:
1	a ₁ b ₁ (KP ₁)	77.8 1	<p>I. Difference of the influence between learning free style results using helping tools and friend's help</p> <p>Based on the first hypothesis testing, there is a real difference in the influence between the student learning group using helping tools and learning with a friend's help (p-value = 0.000 < 0.05). The group using helping tools has 79.88 as the free style learning result, higher than the group with a friend's help, which has a result of 66.04. The group with helping tools has a better average score than a friend's help. Helping tool is beneficial for beginner swimmer, including children (Sin, 2019), because helping tools give protection and comfort, and swimmer will not sink while holding on the buoy; therefore, it can give a safe feeling (Saputra et al., 2021).</p> <p>Students will be capable of training calmly and not feel worried that they will drown. They feel calm while training can help in mastering the free style theory that has been taught by the teacher (Dhani et al., 2022). Another advantage of using a helping tool is that more students can participate because each student gets their buoy. The swimmer can feel happier because each movement's result can be known faster (PEBRIANTI, 2020). Fixing the style is easier because the buoy will help the beginner to make <i>streamline</i>. This can make understanding swimming quicker. The weakness of this learning approach is that students can feel scared because they must do it alone in the beginning. Fixing cannot be conducted immediately (Kusumadewi et al., 2021).</p>
2	a ₁ b ₂ (KP ₂)	78.3 0	
3	a ₁ b ₃ (KP ₃)	82.0 3	
4	a ₂ b ₁ (KP ₄)	59.6 7	
5	a ₂ b ₂ (KP ₅)	64.8 7	
6	a ₂ b ₃ (KP ₆)	73.2 5	

Before data analysis is conducted, it is necessary to test its normality distribution. The population normality test in this study uses *Kolmogorov-Smirnov* method with 5% significance. From the normality test result with the *Kolmogorov Smirnov* method (using a computer), the p-value is obtained as null hypothesis denial. If the p-value is smaller than 0.05, then H₀ is rejected, meaning the residue is not distributed normally. On the other hand, if the p-value is more significant than 0.05, it can be concluded that the residue is distributed normally. From the normality test result, the p-value obtained = 0.747 > 0.05. Therefore it can be concluded that residue is normally distributed.

From the homogeneity test result carried out with Levene's test (using a computer), the p-value is obtained as the base denial null hypothesis. If the p-value is smaller than 0.05, then H₀ is rejected, which means all three groups do not have the same variant. If H₀ is accepted, this means two groups have the same variant. From the test, the result obtained is p-value = 0.061 > 0.05. It can be concluded that the two groups have the same variant.

The swimmer must have the skill to control the buoy. They must have, provide, and take care of the types of equipment used (Sorayah, 2018). The group with a friend's help has a lower average score because students depend on the handle and help from their partner, so they need more self-confidence. Students will feel afraid of sinking or drinking water. Besides that, friends help lessen the learning frequency because each student needs to take a turn with their partner. This dependency causes the results of free-style learning to be less than the maximum (Rizkiyansyah & Mulyana, 2019). The usage of helping tools in learning to swim also has its drawback. A beginner swimmer will face many obstacles because it requires a unique technique to master the movement of the buoy used. The swimmer must have a stable body position, especially while learning arm movement. Many beginner swimmers tend to roll right and left, so it hinders their movement.

2. Difference in free style learning result based on anxiety level

Anxiety is an important thing to be noticed in swimming practice, especially in children. Anxiety can cause tension and exaggerated fear, making concentrating on learning to swim difficult (Chaerunisa, 2013). Anxiety will influence the current state of the child. Children will have low courage levels, negatively impacting their learning results (Febri, 2018). The result of the study shows student group with a high anxiety level had lower results in free style learning, with a score of 68.74, compared to students with moderate anxiety, with a score of 72.48.

Student group with high anxiety levels has lower results in free swimming learning, with a score of 68.74, than students with low anxiety levels, with a score of 77.64. The student group with moderate anxiety level scored 72.48,

which is lower than the low anxiety level group with a score of 77.64. This result shows that the higher the student's anxiety level, the lower the learning result (Selviana, 2017). If the anxiety level is lower, it can produce a better learning result because students dare to learn to swim. Students with high anxiety will feel doubtful or afraid to learn swimming, so the result is less than the maximum.

This study proves that students with high anxiety levels have different results in free-style learning than students with moderate anxiety levels. Students with high anxiety levels have different learning results than those with low anxiety levels. Students with moderate anxiety levels have different results than those with low anxiety levels (Aliansyah, 2022), therefore it can be considered true because $p\text{-value} = 0.020 < 0.05$.

3. Interaction influence between learning approach and anxiety to free style learning result

From the summary table of two factor variant analysis result, it can be seen that the factors, in the form of two factor, show no interaction. For testing purpose, AB interaction is showed on the table below: The study shows no correlation between learning using a helping tool and a friend's help with anxiety levels. This is proven from score $H_0 = 0.05$. This can be proven with a two-factor variant analysis with $p\text{-value} = 0.309 > 0.05$. So, learning using helping tools and friends helps with anxiety levels, the result of free style learning; there is no significant influence or interaction between them (Abel et al., 2022). The post-test result shows a comparison of each group, with a lot showing no significant difference. In *the multiple comparisons table*, the difference average is obtained between every group. There are four groups with a significant difference and 11 other groups with no

significant difference. Four groups with significant differences are as follows: the first group is the learning group using helping tools with high anxiety levels, and the learning group uses friends' help with high anxiety levels. The second learning group used helping tools with moderate anxiety levels, and the learning group used friends' help with high anxiety levels. The third learning group used helping tools with low worry levels, and the learning group used friends' help with high anxiety levels. The fourth learning group used helping tools for low anxiety levels, and the learning group used friends' help with moderate anxiety levels.

CONCLUSION

Based on the results of the study and the results of data analysis that has been conducted, it can be concluded that: 1). There is a significant difference of the influence between using helping tools and a friend's help in the result of free style learning. The study result shows that learning free style with helping tools has better results than using a friend's help. The result of each method is as follows: for using helping tools, the average result is 79.87, and for using a friend's help, the average result is 66.04. 2). There is a difference in free style learning results between students with high, moderate, and low anxiety levels. Low anxiety level has better outcomes than moderate and high anxiety levels in free-style learning. The average yield of these categories is: for high anxiety level is 68.74, moderate anxiety is 72.48, and for low anxiety is 77.64. 3). There is no influence of interaction between learning with helping tools and friends' help with anxiety and the result of free style learning.

In order to increase swimming learning quality and fulfill the demand for a professional teacher, there are several factors that physical education teachers should note: 1) Grouping students

according to their psychological state. 2). Careful and attentive in choosing the right approach to learning, considering the students' ability and the factors that can enhance their swimming ability. 3) Evaluate with different ratings according to the students' physical and psychological state. 4) Similar study needs to be conducted with more population area and more samples.

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