The Use of Bubble Float and Kick Board in Reducing Anxiety of Water to Improve Students' Freestyle Stroke Technique

Badruzaman Badruzaman

Faculty of Sport and Health Education, Universitas Pendidikan Indonesia, Jln. Dr. Setiabudhi No. 229, Bandung, Indonesia
badruzaman@upi.edu

Keywords: Helping Tool, Bubble Float, Kickboard, Anxiety, Swimming Skill.

Abstract: The purpose of the research was to study learning model for swimming skills by using bubble float and kickboard as tools to cope with water anxiety in improving students' freestyle stroke technique. This descriptive research used causal comparative method through observation and test. The results of this study showed that there was significant influence of using buoy towards student' learning outcomes ($F_o = 3.50 > F_t = 3.17$ at $\alpha = 0.05$). The anxiety of water significantly influenced on students' swimming learning outcomes ($F_o = 21 > F_t = 4.02$ at $\alpha = 0.05$). There was interaction between buoy as helping tool and anxiety with the value of $F_o = 3.50 > F_t = 3.17$ at $\alpha = 0.05$. Based on the result of post-hoc test on interaction, the significant interaction only occurred in high anxiety with buoy tool ($F_o = 77.12 > F_t = 5.01$ at $\alpha = 0.01$).

1 INTRODUCTION

Swimming sports belong to skills that are quite difficult to master, especially for people who have water anxiety. Before the swimming learning began, majority of the students (80%) admitted that they could not swim and the other students (20%) had high water anxiety. Fear of water is the major cause of someone's difficulty in mastering swimming skills. The people who had fear of water will find difficulties in getting their whole body into the water especially the head. Their muscles will become tense, making more difficult to perform swimming techniques. Thus, during the learning process they have difficulty in following the teaching tasks given. Regarding with anxiety, it is described as the athlete feeling about something undesirable is about to happen. This condition gives unfortunate effect for the athletes, especially if they have no enough confidence (Satiadarma, 2000). Murphy (2005) defines anxiety as an anticipatory emotion, a future-oriented response to a perceived but vague threat that makes us feel powerless because we cannot protect ourselves from an uncertain and unpredictable event. The action tendencies of anxiety are escape and avoidance.

Therefore, the people who have water anxiety tend to avoid swimming and they will find difficulties in performing swimming movement. They seem not to do what they are told to, tend to be stiff, become confused, and move with poor control. Pate et al. (1993) explains that anxiety tend to make the athletes unable to fully follow the instructions given. Weinberg and Gould (1995) state that increased arousal and state anxiety cause increase muscle tension and can interfere coordination. The problem of anxiety has affected the performance at sports as explained in many previous studies, for example, Cox (1990) states that sport psychologists actually know very little about the effect of positive stress (eustress) on athletic performance. It would appear that the relationship between state anxiety and athletic performance takes the form of the Inverted-U. However, in recent years, several studies have reported a negative linear relationship between athletic performance and anxiety in the case of swimming (Cox, 1993; Muhamad, 2013). Students who showed a higher anxiety level, especially during the first swimming classes, achieved lower results in swimming skill test. Avramidou (2007) and Muhamad (2013) have found a negative linear trend between anxiety and swimming performance as well as a positive linear trend between self-confidence and performance. Avramidou (2007) found that lifesavers had generally lower levels of anxiety than the swimmers could be related to their respective trait-anxiety levels. For both groups higher levels of worry (trait) were associated with higher levels of state cognitive anxiety during training. For the swimmers, however, worry and somatic trait-anxiety were also

303

associated with higher levels of somatic anxiety and lower levels of self-confidence during training. Cox (2002) also indicated that swimming performance had improved after intervention for all experimental participants. Burton (1988) have indicated that the relationship between performance and anxiety would depend on the level of anxiety. Burton (1988) and Cox (1990) observed that the relationship between performance in swimming and state anxiety was linear and inversely related when the cognitive or worry subscale was used and quadratically related (inverted U) when the somatic subscale was being used.

The teachers are responsible for anticipating the students' water anxiety problem and for ensuring the safety protection for the students. Safe learning environments can almost always be prepared for ahead of time. Experienced teachers should learn to anticipate safety problems and to arrange equipment, space, and people so that the environment both is safe and facilitates learning. Therefore, the use of buoy tools in the swimming learning process is a very necessary for students who have fear of water. This is an effort to prevent the accident from drowning, and also to help ease students' anxiety. The result of previous study found that the floating group gave a statistically significant greater interest in using floating toys during free play (p=0.03). Although the instructors had removed the toys, the children requested to use them again. They felt more comfortable having a floating aid which could be used during play and instructions. Their aquatic confidence especially in performing floating skills was less than the control group children (Kjendlie and Mendritzki, 2012). One of the solutions to anticipate the water anxiety in learning swimming practice is through aid tools to reduce water anxiety and to increase the buoyancy. These tools make the learning process more active and efficient. Therefore, the students can both follow the instruction given during learning process and study independently. Pate et al. (1995) states that the athletes with low anxiety level will easily follow the relevant guidelines. Bubble float tool that is tied at the waist seems simpler, does not interfere with the arm movement, and has fairly balanced buoyancy because it is placed in middle of the body – behind the back. Besides, it is also safer because it uses a rope tied with a buckle which is strong enough to lock. Therefore, the students will feel secure despite swimming in the deep pools because this tool allows them to more easily float and constantly help the body position in a horizontal position during the swimming exercise when learning legs and arms movement, and coordination.

2 METHODS

2.1 Participant

Participants of this research were the second semester students of sport science study program for class of 2015 who were taking swimming practice. Male subjects (N = 60) were in the average age of 19 years old. The subjects were divided into two groups based on the results of anxiety tests that indicated anxiety level characteristics. 30 people belonged to the high anxiety group (anxiety score = 21-30 points / 70-100%) and the other 30 students were included to moderate anxiety (anxiety score = 11-20 points / 36-69%). Samples were randomly assigned (Creswell, 2013). Both groups were put into three cells, each of ten students were given different methods which were randomly determined.

2.2 Instrument

There are two instruments used. First, observation guidelines adopted from Haris (1984) in (Cox, 1990) were intended to measure water anxiety behaviour. Second, swimming skill test with the determined distance was used to measure the effects of helping tools towards the results of swimming ability.

2.3 Data Analysis

Inferential statistics; two-way ANOVA formula followed by Scheffe post-hoc test were used to analyze the effects of anxiety and aids to the learning result of swimming skill.

2.4 Research Procedures

This research was conducted during swimming practice lecture for one semester (5 months), which was only done once a week on Monday. Each meeting was 90 minutes. Prior to the research investigation, the pre-test was carried out to see the students' basic swimming skill. The students were required to swim at the distance of 25 metres especially performing freestyle stroke. The measurements were only based on how far they could swim. After the results of pre-test were obtained, the researcher prepared to conduct research with the design that had been determined. After the lecture ended, a post-test was conducted with the same distance (25 m) as in pre-test.

3 RESULTS

The result of ANOVA test showed significant differences among the use of tools with the value of Fo = 73, larger than Ft = 3.17 at α = 0.05. Similarly, the influence of high and moderate anxiety levels indicated significant differences with the value Fo = 21 > Ft = 4.02 at α = 0.05.

Based on the results of post hock test, the mean difference on sub variable; the use of bubble float and kickboard, was 3.3 which was equal to the critical value, 3.3 at α = 0.01. It signs that these two swimming tools have significant differences in affecting learning results of students' freestyle stroke.

The mean difference for the use of bubble float aids compared with the method without using tools was 10.3 which had greater value than the critical value of 3.3 at α = 0.01. In the other hand, the mean difference between the students who used kickboard and those who did not was 7 with critical value of 3.3 at α = 0.01. This indicates that the use of kickboard tool has better effect on the learning outcomes of freestyle stroke skill than not using any aids.

Based on the result of the post-test hock interaction, the observed F value was very significant on the interaction between high anxiety with the use of the helping tools (Fo = 77.12> Ft = 5.01 at α = 0.01). This means that high anxiety has greater dependence on the use of buoys rather than other interactions.
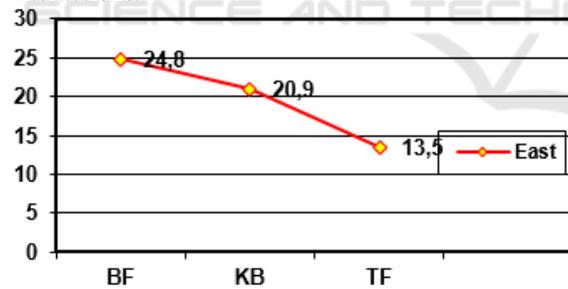

Figure1: Differences in Swimming Learning Outcomes Based on the Use of Tools.

As can be seen on figure 1, it shows the different mean for the two swimming tools compared with not using any tools. The averages of swimming distance are 24 meters for bubble float, 20.9 meters for kickboard, and 13.5 meters for the method of not using any tools.
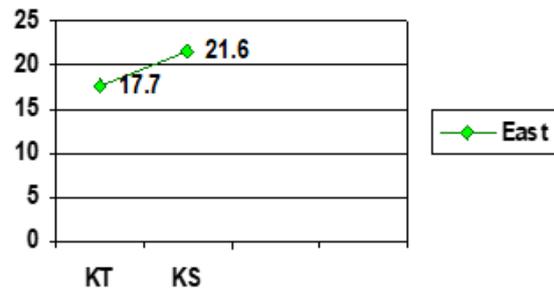

Figure 2: Differences in Swimming Learning Outcomes Based on Anxiety Level.

The figure 2 shows the students with high anxiety level could swim at the distance of 17.7 in average and those with the moderate anxiety level could swim further at the distance of 21.6 m.
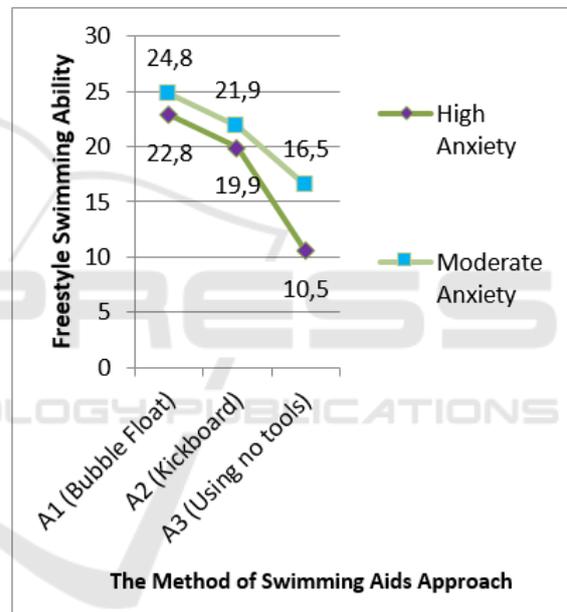

Figure 3: Differences in Swimming Ability Effects of Anxiety Level and Tools.

As shown in Figure 3, the students who used bubble float tool and were in high anxiety level could swim at distance average of 22.8 m. For other students with moderate anxiety level, the average distance of swimming was 24.8 m. In A2, the students who used kickboard and had anxiety were able to swim in the average of 19.9 m, and those with moderate anxiety were 21.9 m. In (A3), students who did not use tools and had high anxiety could swim in the average of 10.5 m, while the moderate anxiety was able to swim in the average distance of 16.5 m.
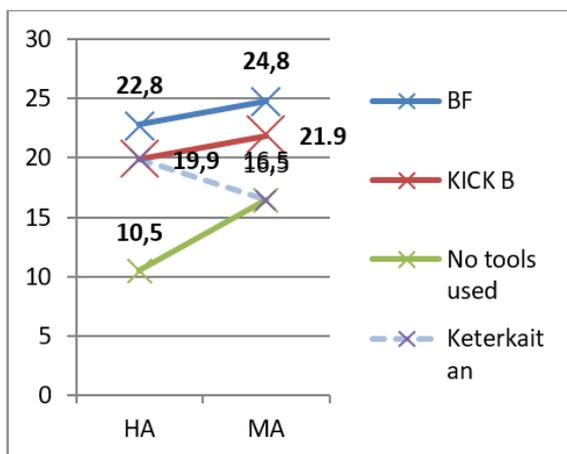
Figure 4: Interactions of Anxiety and Tools.

The figure 4 showed the interactions between anxiety and tools. This concludes that the students with high anxiety level are greatly dependent on buoy tools, particularly Bubble float.

4 DISCUSSION

The results of the research showed that there were significant differences of influence between students who had high and moderate anxiety in the achievement of freestyle swimming skills ability.

This can be understood because during the learning process, students with high anxiety tended to be more silent and to do swimming movements that were often uncompleted or stopped. Consequently, there was much time wasted during the learning process because they often hesitated to swim and looked anxious so that their movements were completely rigid. As stated by Pate et al. (1995), anxiety is most often considered as a personality variable that has a profound influence in learning and performing sports skills. Based on the results of observation on swimming learning skill, the students who had high anxiety were very cautious when putting their heads in the water. When learning to glide in the water, many of the students had not been able to do this technique due to they could not float properly and they were only able to dive in a very short time. They should be able to calmly dive for long time so that they could glide in the water. In fact, they still felt not calm when getting in the water because they were full of doubts and anxiety to do gliding technique. Similarly, they found difficulties when performing gliding technique with leg movement. As they were not calm in gliding into the

water, their body would not be balanced because of their tense muscles. As a result, they made feet movements under the water while they submerged. When they were given additional task to move their arms, most of them were not able to do it. Some of them tried to do it but their movement patterns were not correctly performed. They moved their arms without a series of movement phases or even harmonious feet coordination. It is indeed very difficult if their bodies were below the water surface while they lost awareness of control movements.

In the learning of coordination process and taking breath technique, all of the students who had high anxiety level could not do at all. Taking breath in freestyle swimming is more difficult than other styles.

Freestyle stroke requires the students to turn the head for taking breath. This would be even more difficult if their neck muscles were in tense condition, the body position was deeper than the water surface, and the arm movements were not correct. Accordingly, they took breath in improper way such as raising their chin upward. This kind of breathing technique would cause the feet go down under the water. Hence, the body would be in diagonal position which would make the body sink and slow down the students' swimming because of greater resistance.

The use of swim bubble float had significantly contributed to reduce the anxiety that the students felt in the water. Also, there were some progresses in terms of students' activities when the learning process took place. Their bodies rose above the surface of the water and they felt calm accordingly. Calm body position is the first important thing in order to set and to control the correct movement techniques. Sharron (1992) states that swimming aid helping you to float and stay horizontal in the water, while some can help the learning process along. Thomas (1989) also asserts that whereas about buoyancies belt or bubble float for those few adult's males who have neutral or negative buoyancy: it is suggested that you ask your teacher to fit you with a solid foam buoyancy belt that gives you enough positive buoyancy to float at eye level in this exercise".

Supported by the result of interview, it was found that bubble float which was tied at the waist had more improved the students' confidence that kickboard because it could ensure their safety better and make them easier to swim. Hence, their arm movements were not interrupted by using this tool. On the contrary, the use of kickboard required the students to hold it in front, made them fear of getting it out of hands, and only served to support the upper part of the body. Nevertheless, Hagerman (1987) have strong opinion that it is imperative to have a kickboard in

order to concentrate on kicking motions without worrying about keeping the upper body afloat.

5 CONCLUSIONS

The use of swimming buoy tools among bubble float, kickboard, and without any tool used and the differences of water anxiety level between the high and moderate one had given significant and different effects of the students' freestyle stroke learning outcomes. There were significant interactions between anxiety and the use of buoy tools during the learning process of swimming. The interaction between high anxiety level and bubble float as swim buoy tool were stronger than kickboard and method of not using tool meaning that the students were greatly dependent on bubble float tool in the learning process of swimming. The use of bubble float was more effective because it made the students more confident, more afloat, and more secured of not getting drown. Therefore, they felt calm when performing motion technique practices.

Based on the learning results, it was found that bubble float had greatly improved students' swimming ability compared with the use of kickboard and method of not using tool. The students who used bubble float could swim further than those using kickboard.

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