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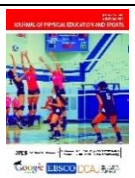

The Effect of Track Distance and Emotional Intelligence on the Results Breaststroke Swimming

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Abstract

The reason for this study is that the length of the swimming training track at the Fish Aquatic Club and Mutiara Swimming Club is different. The purpose of this study was to ascertain the following: 1) to determine the effect of the swimming track's length of 25 and 35 meters on the results of breaststroke swimming. 2) examine the effect of high and low emotional intelligence on breaststroke swimming results. 3). investigated the effect of track length and emotional intelligence on breaststroke swimming performance. This research was using a two-by-two factorial design. The study population comprised twenty sons and twenty daughters from Mutiara swimming club and Fish Aquatic, with an average age of twelve years. The study was conducted between February 15 and 14, 2021. The Anova test revealed that the 35 meter track length (M = 29,72 second) had a significantly greater effect on swimming results than the 25 meter track length (M = 51,25 second), (F(1.36) = 260.178, p0.001, p2 = 0.878). There was a significant effect of high emotional intelligence (M = 35.19 second) swimming results (F (1, 36) = 63.030, p0.001, p2 = 0.636) compared to low emotional intelligence (M = 45,79 second). Track length and emotional intelligence have an effect on breaststroke swimming results (F(1.36) = 6.568, p0.015, p2 = 0.154). 15.4 percent of the variance in swimming exercise results. The findings of this study showed that there was a significant relationship between track length and emotional intelligence and breaststroke swimming performance.

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INTRODUCTION

Sport is primarily a community activity; its existence has evolved into a component of community activities (Chrisnanto, 2018). Sport is significant not only in terms of health, but also as a vehicle for education and even achievement. Sport is one of the ways in which the Indonesian people's quality is improved. It aims to develop strong character, personality, discipline, and sportsmanship, as well as to increase achievements that inspire a sense of national pride (Mulyono, 2018).

Humans can participate in sports on land, in the air, or in the water, but water sports, specifically swimming, are more popular. Without the risk of serious injury, swimming became a sport in the 19th century (Yuliana, Darsi, & Remora, 2021). Swimming was introduced to Indonesia in 1917 as a result of the rapid growth of swimming associations. On March 21, 1951, Poerwo Soedarmo founded the All-Indonesian Swimming Association (PRSI). Swimming causes the body to move without making it feel hot or sweaty. There is a very low risk of injury associated with swimming activities. To avoid injury or accident while participating in swimming activities, it is prudent to be familiar with proper swimming techniques (Rubiansyah, Rusdiana, & Boyke Mulyana, 2016). Based on the exposure to swimming described above, it can be concluded that swimming is a water-based activity involving the movement of body parts such as the head, hands, body, and feet. Swimming, in general, has a variety of benefits and objectives, including being a recreational sport, a health sport, and an achievement sport (Lekso, 2013).

Swimming is a long-established sport that provided many physical and emotional benefits (Tian et al., 2018). Swimming benefits include increased personal safety, physical fitness, rehabilitation, and achievement (Ludtke et al., 2020). In addition, swimming is a sport that competes for the speed of swimming athletes in swimming abilities. According to (Rees, 2013). The swimmer who wins a swimming competition is the one who completes the track distance in the shortest amount of time. In order to improve a sporting achievement, it is necessary to consider several factors, including physical, technical, tactical, and psychological (mental) factors. As stated by (Budiwanto, 2012) said that the fundamental components of training are physical preparation, technique, tactics, and psychic (mental) preparation; these components of training are interconnected and organized in an exercise program and are an integral aspect of every training program.

At best, IQ accounts for about 20% of the factors that determine success in life, of which 80% is occupied by other forces."(Drust, B. and Green, 2021). One other strengths is emotional intelligence (Goleman, 2015:42). Students' emotional intelligence is required during the learning process in order to comprehend the lessons presented by the teacher, as intellect alone cannot function properly without emotional appreciation for each subject (Thralls et al., 2019). It has been scientifically established that emotional intelligence is important for success in all professions and for students to obtain positive learning outcomes (Niven, Rendell, & Chisholm, 2015). Defines "Emotional intelligence is the ability to motivate oneself and endure frustration, control impulses and not exaggerate pleasures, regulate moods and keep stress from crippling the ability to think, empathize, and pray" (Kalsen, Hostrup, Bangsbo, & Backer, 2014). In the Smart Emotion book, Emotional intelligence contains two extraordinary words, namely intelligent and emotional.

External and internal variables both contribute to emotional intelligence (Kuroda, Thatcher, & Thatcher, 2011). External factors are those that originate external to the individual, such as the family environment, society, and the mass media or print media (Lavin, Guenette, Smoliga, & Zavorsky, 2015). These external factors assist individuals in recognizing other people's emotions, educating them about the many types of emotions that other people experience, and assisting individuals in experiencing other people's emotions in conjunction with the accompanying circumstances (Pretty et al., 2010). Internal factors are those that originate within the individual; they assist individuals in managing, controlling, and controlling their emotions in order to maintain proper coordination and avoid causing issues for themselves and others (Steckling et al., 2020).

One of the success factors IQ is critical for success. Children that participate in more activities than children in general typically have a higher IQ and a lower IQ (Falcai, Zamarioli, Okubo, de Paula, & Volpon, 2015). The ability of athletes to be successful and excel in academic and non-academic disciplines is determined by their ability to manage their emotions and adapt simultaneously (Ninot, Connes, & Caillaud, 2015). Not only that, but what truly determines an athlete's achievement is their training routine and training facility, as well as the climate in which the athlete lives and the amount of time spent training each time they exercises.

The following information was collected from initial observations at two swimming clubs, namely Mutiara Swimming Club and Club Fish Aquatik: 1) There were athletes who were unable to manage their emotions when confronted with domestic difficulties. 2) In these two clubs, training took place three times a week and included a variety of exercises, one in the morning and one in the afternoon. 3) The swimming pools used by the two swimming clubs have varying depths. 4) The data on swimmers at Fish Aquatic and Mutiara Swimming Club are varied, with the following details. 5) The length of the track varies between the two swimming clubs; the track at Fish Aquatic is 25 meters long, while the track at Mutiara Swimming Club is 35 meters long. Mutiara Swimming Club has 40 elementary school children and 40 junior high school students. In Fish Aquatic, there are twenty elementary school kids and six junior high school students.

The researchers wanted to know the influence of the duration of the swimming training track in two swimming clubs with varying levels of intelligence and pool depths. This prompts the researchers to rename the study "The Effect of Track Length and Emotional Intelligence on Breaststroke Swimming Results."

METHODS

This study used quantitative research techniques in conjunction with quasi-experimental pre- and post-test designs. Ten boys and ten girls from the Fish Aquatic swimming club and ten boys and ten girls from the Mutiara Swimming Club were used in this study. At the Fish Aquatic Club, 40 samples were collected and separated into two groups, while at the Mutiara Swimming Club, two groups were formed. The authors administered a questionnaire to all students prior to swimming to ascertain which students possessed high emotional intelligence and which possessed low emotional intelligence, and then classified them accordingly. A total of 40 samples were collected and then separated into two groups at club 1 and two groups at club 2 based on the respondents' emotional intelligence levels. According to the respondents' emotional intelligence levels, each group swimming breaststroke with a track distance of 25 or 35 meters.

Table 1. Research Design

Emotional Intelligence (B)	Track Length (A)	
	35 Meter (A1)	25 Meter (A2)
High (B1)	A1B1	A2B1
Low (B2)	A1B2	A2B2

This study lasted two months and included a three-times-per-week fitness routine. Two or more variables are manipulated concurrently in a factorial design to assess the influence of each on the dependent variable, as well as the effects of variable interactions (Arief, 2004), namely: The group with a track length of 25 meters and low emotional intelligence. The group is 25 meters long and has high emotional intelligence. The group with a track length of 35 meters and low emotional intelligence. Group length of 35 meters track and high emotional intelligence.

The Pre-test and Post-test techniques were used in the study to collect data on the results of swimming training; the specifics and stages of the research were as follows. The authors administered IQ tests to pupils from two distinct clubs in Wonosobo and Semarang regencies. The questionnaire analysis results in the classification of respondents into two groups: those with a high EI and those with a low EI. After determining the group using the results of the EI questionnaire, the researcher will administer a breaststroke swimming pretest using the 50-meter breaststroke swimming research instrument. The author administered the breaststroke swimming test by covering a distance

of 50 meters as specified in the FINA handbook (2013-2017) in (Shava, Kusuma, & Rustiadi, 2017).

Table 2. Assessment Criteria for Breaststroke Swimming

Criteria (%)	Time to secons	Classification
100	00.33.02 ≤	Excellent
90	00.36.68 – 00.41.26	Good
80	00.41.27 – 00.47.16	Fair
70	00.47.17 – 00.55.02	Low
60	00.55.03 ≥	Very low

(FINA hand book (2013-2017) in (Shava et al., 2017).

The required analysis tests, namely the Normality Test (Kolmogorov Smirnov Test) and Variance Homogeneity Test (with Levene's Test), were used to analyze the data. The normality test is used to determine whether or not the data in the study were drawn from a normally distributed sample. The homogeneity test determines whether or not the variance within each group is homogeneous.

In this study, quantitative analysis will be performed using two-way vactorial analysis (ANOVA) with a significance level of = 0.05. The author used two-way ANOVA to test the comparative hypothesis for the sample average in this study because the researcher categorizes the sample into several variables, such that if the variable or source of diversity in one-way ANOVA comes from treatment and error, the source of diversity in two-way ANOVA comes from variables as well.

RESULT AND DISCUSSION

Data analysis was using IBM SPSS 20 variance analysis.

Differences in the Effect of Swimming Track Length 25m and 35m on the Results of Breaststroke Swimming

The complete results of the Kolmogorov Smirnov test shown in the appendix, while the summary is as in the following table:

Table 3. Sample Normality Test Results

Group	N	D	p	α	Conclusion
A1B1	10	0.242	0.100	>0.05	Normal
A1B2	10	0.175	0.200	>0.05	Normal
A2B1	10	0.158	0.200	>0.05	Normal
A2B2	10	0.180	0.200	>0.05	Normal

The results of the first group investigation, namely the group with poor emotional intelligence and a 35 meter track, revealed that a score of (M = 26.13 second; SD = 5.52; min = 20.47; max = 39.32) was obtained from ten respondents (M = 26.13 second; SD = 5.52; min = 20.47; max = 39.32). The second group possesses a high degree of emotional intelligence and a 35-meter track. It is known that the score (M = 33.31 second; SD = 4.28; min = 26.30; max = 39.05) was obtained from ten respondents. In total, 20 persons were sampled in the exercise frequency group on a 35 m track (M = 29.72 second; SD = 6.06).

Table 4. Research Sample Group Interaction

Interaction	Mean	SD
A1B1	26.13 second	5.52292
A2B1	33.31 second	4.28232
A1B2	44.24 second	2.74181
A2B2	58.26 second	3.86265

According to the results of namely the low emotional intelligence group and the 25 m track length, a score of (M = 58,26 second; SD = 2.74; min = 40.08; max = 49.05) was obtained from ten respondents (M = 44.24 second; SD = 2.74; min = 40.08; max = 49.05). Ten respondents obtained a score (M = 58.26 second; SD = 3.86; min = 53.27; max = 65.30) for the fourth group with a high EI and a 25-meter track. The high emotional intelligence group comprised 20 people (M = 35,19 second; SD = 13.40), while the low emotional intelligence group consisted consisted of 20 people (M = 45,79 second; SD = 10.21).

Table 5. Research Result Data

Track Length (A)	Emotional Intelligence (IQ)		Total
	High (B_1)	Low (B2)	
35 m (A_1)	$\Sigma X_1 = 261.33$ $X_{rata} = 26.13$ Min = 20.47 Max = 39.32 SD = 5.52 n = 10	$\Sigma X_2 = 333.10$ $X_{rata} = 33.31$ Min = 26.30 Max = 39.05 SD = 4.28 n = 10	$\Sigma Xb_1 = 594.43$ $Xb_{rata} = 29.72$ $nB_1 = 20$
25 m (A_2)	$\Sigma X_3 = 442.44$ $X_{rata} = 44.24$ Min = 40.08 Max = 49.05 SD = 2.74 n = 10	$\Sigma X_4 = 582.63$ $X_{rata} = 58.26$ Min = 53.27 Max = 65.30 SD = 3.86 n = 10	$\Sigma Xb_2 = 1025.07$ $Xb_{rata} = 51.25$ $nB_2 = 20$
Total	$\Sigma Xk = 703.77$ $Xk_{rata} = 35.19$ $nA_1 = 20$	$\Sigma Xk = 915.73$ $Xk_{rata} = 45.79$ $nA_2 = 20$	

Differences in the Effect of High Emotional Intelligence and Low Emotional Intelligence on the Results of Breaststroke Swimming

The Anova test results showed that emotional intelligence influenced children's swimming performance. High emotional intelligence (M = 35,19 second; SD = 13.40) substantially outperformed low emotional intelligence (M = 45,79 second; SD = 10.21) in swimming (F (1.36) = 63.030, p0.001, p2 = 0.636). Athletes with varying degrees of emotional intelligence have varying swimming talents. 63.6% of all variance affecting the performance of swimming athletes as a result of differences in emotional intelligence, such that the resulting effect size falls into the large category. According to the results of the additional test stated in the table above, students with a high level of emotional intelligence performed better in swimming than those with a low level of emotional intelligence.

Table 6. Two Way Anova Calculation Results at the Significance Level

Source	Type III Sum of Squares	Df	Mean Square	F	Sig.	Partial Eta Squared
Corrected Model	5876.479[a]	3	1958.826	109.925	.000	.902
Intercept	65569.506	1	65569.506	3679.625	.000	.990
EI	1123.176	1	1123.176	63.030	.000	.636
Training	4636.270	1	4636.270	260.178	.000	.878
EI* Training	117.032	1	117.032	6.568	.015	.154
Error	641.506	36	17.820			
Total	72087.491	40				
Corrected Total	6517.985	39				

a. R Squared = ,902 (Adjusted R Squared = ,893)

The Interaction Between Track Length And Emotional Intelligence On The Results Of Breaststroke Swimming

Additionally, the Anova test revealed an interaction between track length and emotional intelligence and breaststroke swimming performance. There was a significant interaction between track length and emotional intelligence on breaststroke swimming performance ((F (1,36) =

6.568, p0.015, p2 = 0.154), accounting for 15.4 % of the variance in swimming results.

DISCUSSION

This finding is in line with (Evenetus, Mulyana, & Ma'mun, 2019). who reported that the study's findings indicated that an exercise program that included more swimming exercises had a significant effect on increasing arm power, arm endurance, and swimming performance in the 50 meter breaststroke, but not on arm strength, as well as on increasing a student's emotional intelligence.

Repetition is the number of repetitions of the same movement/stimulus in a certain time. Fixed repetition is the number of repetitions of the same movement, where the number does not change within a certain time, while increasing repetitions is the number of repetitions of the same movement, where the number is increasing in a certain period of time (Chrisnanto, 2018). Speed is the most important component in sports, especially swimming, because speed is needed when competing to achieve maximum performance. Breaststroke swimming is influenced by the acceleration of hand movement when sliding, but kicks are the dominant driving force in breaststroke swimming (Shava et al., 2017).

This showed d that to improve breaststroke swimming performance, children are not only measured by the length of the track, but also by emotional intelligence. The findings of this study indicate that students' ability to swim increased significantly in the group of students with a track length of 35 meters and a high level of emotional intelligence.

CONCLUSION

The effect of track length on breaststroke swimming outcomes varies. The 35 meter track length exercise (29,72 second) had significantly faster swimming results than the 25 meter (51,25 second) track training group. Breaststroke swimming outcomes were influenced by emotional intelligence. A high level of emotional intelligence (35,19 second) results in significantly faster swimming than a low level of emotional intelligence (45,79 second). The length of the track and emotional intelligence influenced breaststroke swimming at the Fish Aquatic and Mutiara Swimming Clubs.

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