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Does Floor Color Affect Athletes' Anticipation Time?

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Abstract

The primary purpose of this study is to reveal the differences between different ground colors and the anticipation times of university athletes who do team and individual sports and investigate the relationships. Fifty student-athletes engaged in individual and team sports participated in the study voluntarily. Bassin Anticipation Timer device was used to determine the sensing time of the athletes. The results showed no significant difference between individual and team athletes' perception time values according to sports age and different ground colors. In addition, while there was a significant relationship between the sensing times of the athletes participating in the test on the red and orange background, no significant association was found on the other ground colors. Consequently, although the floors used in the sports are seen as separated from each other according to the colors, it is found that different floor colors do not affect the anticipation time of the individuals engaged in individual and team sports.

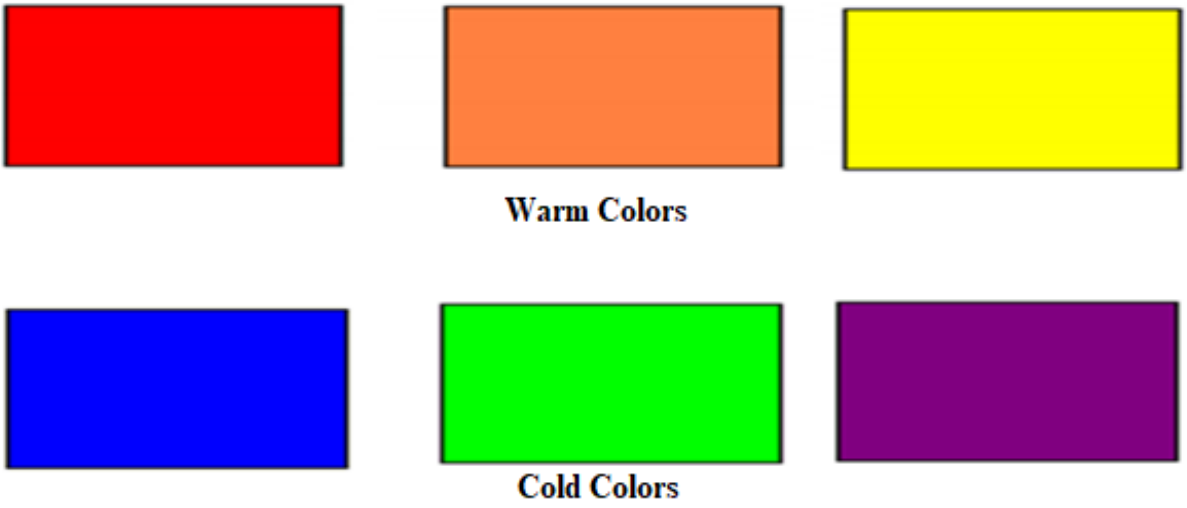
Keywords: Sport, Floor, Color, Anticipation Time

Introduction

Anticipation time is defined as the ability to predict when an object or image will reach a specified target point in time and space. Anticipation is expressed as the ability of an athlete to predict how an action will result and to apply this prediction by the purpose in terms of duration, frequency, and time (Weineck, 2011; Williams et al., 2000).

In sportive tasks where strict temporal constraints are imposed on athletes, the ability to accurately predict an action that is about to occur can be shown as a prerequisite for sporting excellence (Roca et al., 2011). Furthermore, the ability to predict what an opponent will do next is crucial, especially in sports where there are significant time pressures. In summary, talented athletes can minimize uncertainty and reduce cognitive load by assigning a hierarchy of probabilities based on possible event scenarios (Williams & Jackson, 2019).

Much of an individual's sensory interaction with his environment is based on his visual perceptions of light and color stimuli. Colors, which are caused by the concentration of light frequency at a specific rate, impact human psychology and behavior with their low or high vibrational energies. The psychological effects of colors affect mental activities, physical performance level, and psychosocial status (Duran Sağocak, 2005).



Uçar (2004) states that colors are classified as warm and cold colors: red, orange, and yellow are warm colors; blue, green, and purple are cold colors. On the other hand, red, orange, and yellow colors, which are warm, can be perceived more quickly than cold colors. Özdemir (2005) also emphasizes that it has been proven today that those colors have many psychological effects such as "warmth, coldness, activity, passivity, lightness, stimulation, relaxation, joy, sadness" that differ in terms of type, value, and saturation.

The colors preferred by the athletes in sports environments generally focus on red, blue, and white. When an evaluation is made primarily in the football branch, it is seen that red, blue, and white colors are mainly used in shorts, T-shirts, and leggings (Yamaner and İmamoğlu, 2018). Almost all organizations, such as schools, universities, and sports clubs, have a specific color to express themselves and an emblem or flag that carries this color (Özdemir, 2005).

The sports environment is differentiated from each other according to the different floors used in the sports branch. For example, a football field with green grass ground as a ground color is among the cold colors, and an orange athletic field is among the warm colors. Therefore, this study examines the anticipation times of student-athletes who do team sports and individual sports on different floor colors.

Material and Method

Study Group: 29 student-athletes engaged in team sports (football, volleyball, basketball) and 21 student-athletes involved in individual sports (athletics, boxing, tennis) voluntarily participated in the study.

Table 1. Comparison of athletes' age and experience

Age	Team	29	21,41	2,71	-,893	,376
	Individual	21	22,28	4,19		
Experience	Team	29	8,58	3,43	,764	,449
	Individual	21	7,81	3,69		

There is no significant difference between the two groups, indicating that the groups are similar.

Data Collection Tools: Bassin Anticipation Timer device (Lafayette Instrument Company, Model 50575) was used for anticipation time measurement, while demographic information was collected using the personal information form.

Data Collection: The Bassin Anticipation Timer device was placed on the table and introduced to the participants in the laboratory environment. The anticipation time values of the athletes participating in the research were measured at a speed of 5mph. After every ten repetitions, the floor color and background color of the table are changed.

Analysis of the data: The obtained data were analyzed in the SPSS 18.0 program. The Shapiro Wilk test was used to determine the data's normality distribution, the t-test was used for comparisons between groups, and the Pearson correlation test was used to examine the relationships between variables.

Findings

In this section, the results are presented with comparison and relational analysis.

Table 2. Comparison of individual athletes and team athletes' anticipation times on different floor colors

Variables	Group	N	Mean	SD	t	p
Red	Team	29	0,024	,030	-1,113	,271
	Individual	21	0,077	,032		
Green	Team	29	0,059	,017	-,188	,852
	Individual	21	0,049	,023		
Blue	Team	29	0,049	,014	,686	,496
	Individual	21	0,080	,017		
Orange	Team	29	0,069	,038	-1,385	,172
	Individual	21	0,074	,041		

No significant differences were found between the team and individual athletes' anticipation times on different floor colors (p>0,05).

Table 3. The relationship between anticipation time on different colors and experience

Variable		Age	Experience	Red	Green	Blue
Experience	r	,243				
	p	,089				
	n	50				
Red	r	,096	,012			
	p	,506	,934			
	n	50	50			
Green	r	-,028	,018	-,187		
	p	,845	,899	,193		
	n	50	50	50		
Blue	r	,147	,194	-,018	,187	
	p	,307	,177	,901	,193	
	n	50	50	50	50	
Orange	r	,297*	,133	,384**	,049	-,075
	p	,036	,358	,006	,736	,605
	n	50	50	50	50	50

Examining the responses by the athletes on different floor colors in anticipation time, a significant relationship was found between orange and red. In contrast, no significant association was found between other colors (p>0.05). In addition, no relationship was found between the experience and the responses given to different ground colors (p>0.05).

Discussion and Conclusion

This study was carried out to examine the differences between the different floor colors selected among the warm and cold colors and the anticipation times of the student-athletes engaged in the team and individual sports. No difference was found between the anticipation times of team

and individual athletes according to different floor colors. However, in terms of athletes' anticipation time scores, there was a significant relationship between the orange and the red. Still, no significant relationship was found between the experiences and the responses on different floor colors.

Duran Sağocak (2005) emphasizes that color contributes to human object-environment harmony, as it is an essential stimulus in terms of the individual's physical, mental, and psychological characteristics. İmamoğlu (2019) emphasized that warm colors such as yellow and pink should be preferred for sports floors since there are areas with high energy, and color design can be made by considering the training of children and adults when arranging the interiors of sports facilities. It has been stated that these colors should be warm in young children and cooler in adolescents.

In a study by Akbulut, Aktağ, and Akpınar (2015), the anticipation times of team and individual athletes were examined. It was determined that individual athletes had a significantly better anticipation time than team athletes. Özbay, Ulupınar, and Özkara (2018) drew attention to the importance of anticipation in athletes and stated that an athlete could have the ability to change direction very quickly and very well. Still, if the anticipation is not sufficient, the athlete should not be described as agile.

Ceylan and Günay (2020) stated that it is significant for trainers or exercise experts to consider this issue, especially when planning specific perceptual-cognitive exercises, for athletes to achieve optimal cognitive performance. According to Runswick, Roca, Williams, and North (2020), skilled players in sports such as baseball, cricket, or tennis can hit fast-moving objects with extremely high levels of accuracy. The ability to predict a possible situation is essential to superior performance.

Consequently, although the floors used in sports are seen to be separated from each other with different colors, it can be said that different floors do not affect the anticipation time of team and individual athletes. Therefore, future studies should research the relationship between different floor colors and athlete performance.

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