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The Effect of Using Different Geometric Shapes and Different Colors on the Development of Basic Football Skills

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Abstract

Study purpose. This study aims to reveal the impact of the proposed educational program using different geometric shapes and various colors in the development of performing arts skills for a number of basic soccer skills.

Materials and methods .The research method using experimental was used. The research community was represented by fifth-grade high school students totaling (133) students. The sample consisted of three divisions (a, c, d), they were deliberately selected, to match and estimate the daily lesson hours, and thus the number of samples for the three divisions reached (99) students, and a number of sample members were removed, thus reaching the final sample number (42) students divided into (3) experimental groups with

Results.There are significant differences between the averages of the scores of the pre- and post-tests in the first experimental group in the skill and performance for the following skills: (short pass, medium pass, close scoring, and Long-distance scoring), as the values of (T) calculated respectively are (6.711, 11.885, 14.447, 11.646), which is greater than the tabular value of (T) at the error rate of $\leq (0.05)$ and in front of the degree of freedom (13) of (2.16) and in favor of the post-test.

Conclusion. Concluded that all three educational programs have a positive impact on the development of performing arts selected basic skills in soccer, and the second experimental group, which used (geometric shapes with cool colors), the researchers recommend emphasizing the use of geometric shapes with cool colors in the design of skill exercises used in the applied part of the lesson.

Keywords: Geometric Shapes, Various Colors, Basic Football Skills.

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Introduction

The learner interacts with the environment through visual, auditory and kinetic sensation, when a certain stimulus (or more) grabs his attention while performing a specific

skill, or during a game, and thus he needs an explanation for these stimuli that aligns with his mental skills, physical capabilities, and previous experiences trying to program and interpret these stimuli, to achieve a distinguished performance or reach a certain level or achievement of a certain sport and to develop any game we must pay attention to educational aids and helping equipment. Therefore, it has become necessary to pay attention to the new aspects and teaching aids that help increase students' motivation and prompt them to perform motor activities with a better response and efficiency, and work to change the mechanism of performance and the predominant method of the execution of the lesson. The use of interesting teaching aids and tools in the practical part of the lesson must have a positive result, and these aids include geometric shapes and educational tools, instead of using random shapes or unstudied drawings, as well as the color of these geometric shapes.

Gustian states that "the learner can get a clear picture of a successful performance through devices and tools that show the correct way to score or pass with the teacher explaining and commenting" (Gustian et al. 2024). Given that the psychological effects of varied colours and geometric forms significantly influence a learner's motivation to complete the skill training that has been assigned to him in order to attain optimal performance, through the student's successes while using these geometric forms for skill training. These effects may provoke a sense of optimism, enthusiasm, as well as calm and relaxation, and enhance motivation and concentration, (Ben Said et al. 2024) notes that "The advancement of an individual's level and success depends largely on the extent of mastery of skills and can be attained through the adoption of the correct technique in the methods and means of learning and training" (Olesov et al. 2020).

Football is one of the sports that are characterized by the abundance and diversity of basic skills, as well as its link to the cognitive, physical, tactical and psychological aspect. Because of the importance of the football player's skills and physical elements, interest has increased in teaching these skills and elements for the purpose of acquiring and mastering them to a high degree, which prompted many researchers to carry out research and studies to find the best and most appropriate ways to improve them and reach the best levels (Tuyls et al. 2021). Football is one of the subjects included in the preparatory school curriculum, which includes a number of basic skills that the student must learn and master well in order to raise the level of athletics and prepare academic staff. To achieve this, it is necessary to rely on experts and specialists in developing educational programs based on the scientific method in their planning and execution in order to improve conditions and guarantee that educational objectives are met. Therefore, it became clear how important it was to research how suggested educational programs employing diverse geometric shapes and colors affected the development of certain visual capabilities as well as the acquisition of several essential football skills. To find innovative, new and diverse ways that enable learners to obtain a great deal of knowledge and provide useful and valuable information to those concerned with this game, including physical education teachers in schools, to help them improve the performance of their students, players and sports teams to enable them to reach advanced levels.

Colors have an effect on the degree of concentration. Some of them attract attention and some are dim and do not make a difference when looking at them. The lack of interest in using educational tools with various colors and geometric shapes in skill exercises that depend on accuracy in the practical part of the lesson, the effect of which is positively reflected in developing the art of skill performance for a number of basic skills in football. Hence, the research problem arose in investigating the extent of the influence of geometric shapes with different colors in developing the art of skill performance for a number of basic skills in football.

The research aims to reveal proposed educational programs using different geometric shapes and various colors in developing the skill and performance for a number of basic football skills, and to reveal differences between the three research groups in the post-test in the development of skill and performance for a number of basic football skills, among fifth grade high school students. The research hypotheses were represented by existence of significant differences between the pre- and post-tests results in the development of the skill and performance for a number of basic football skills and for the three research groups, and significant differences between the three research groups in the post-tests in developing the skill and performance for a number of basic football skills.

Materials and methods

Study participants

The research community was represented by the fifth grade preparatory students at (Sharya Secondary School for Boys) for the school year (2023-2024), with (133) students distributed over four classrooms. The research sample consisted of three classrooms (A, C, D), they were deliberately selected because of the similarities in their school schedule during the day. Thus, the number of the sample for the three classrooms reached (99) students, and a number of members of the sample were excluded due to their incompatibility with the sample, as well as the exclusion of students of classroom (B), who were selected as a sample for stability and exploratory experiments. Thus, the final sample number reached (42) students divided into (3) experimental groups by (14) students for each experimental group, and a percentage of (31,587%) from the original community, and the proposed educational programs were distributed to the groups by lottery Starting from 1/24/2023 until 7/28/2024.

Study organization

The researchers used the experimental method because it suits the nature of the research. The researchers used the experimental design called (design of random selection equivalent groups with pre- and post-observation), (Ramadhan, 2023). The technical performance evaluation of the passing and scoring skills was carried out by the specialists in the field of football, and for both the pre- and post-tests of the three research groups. The technical performance of the skills was filmed and distributed to the residents, and transferred to DVDs for each of the three groups. After conducting exploratory experiments on the research groups and working to overcome and address the difficulties and obstacles faced by the researcher, the main experiment was conducted on the three research groups, which began on Sunday (19/11/2023) and ended on Sunday (31/12/2023).

The scientific foundations of the tests (Validity, stability, and objectivity) have been applied, as shown in [Table 1](#).

Table 1. Shows the factors of validity, stability, and objectivity of the skill and performance of the passing and scoring skills in football

No	Statistical Features Tests	Unit of Measurement	Stability Coefficient	Self-Validity	Objectivity
1	Short Pass	degree	0.95	0.97	0.90
2	Medium Pass	degree	0.98	0.99	0.93
3	Close Scoring	degree	0.88	0.93	0.88
4	Long-Distance Scoring	degree	0.90	0.95	0.83

Table 1. shows that the values of the correlation factors ranged between (0.83 and 0.99), which indicates that the tests have high validity, stability and objectivity coefficients.

Homogeneity in growth variables (mass, age and length): The researchers conducted the process of homogeneity in the growth variables (mass, age and length) of the members of the research group, as shown in **Table 2**.

Table 2. Shows The Results Of The Analysis Of Variance In The Growth Variables Between The Three Research Groups

No.	Growth variables	Unit of Measurement	Contrast source	Sum of squares	Degrees of freedom	Average of squares	Calculated value of (F)
1	Mass	kg	Between groups	556.891	2	278.445	2.390
			Inside groups	4543.775	39	116.507	
			Total	5100.666	41		
2	Age	Month	Between groups	20.333	2	10.167	0.766
			Inside groups	517.786	39	13.277	
			Total	538.119	41		
3	Height	cm	Between groups	83.476	2	41.738	1.630
			Inside groups	998.929	39	25.614	
			Total	1082.405	41		

* Tabular value of (F) at an error ratio of $\leq (0.05)$ and in front of two degrees of freedom (2, 39) = 3.231

Table 2 showed that there were significant differences between the research groups in growth variables, as the calculated values of (F) were, respectively, (2,390, 0.766, 1,630), which are less than the tabular value of (F) at an error ratio of $\leq (0.05)$ and in front of two degrees of freedom (2, 39) = (3.231) and this indicates the homogeneity of the three research groups in these variables.

The Equivalence in the performance skill of passing and scoring in football between the three research groups:

The process of parity was conducted among the members of the research group in skill and performance for some basic football skills, as shown in **table 3**.

Table 3. Shows The Results Of The Analysis Of The Variance Between The Three Research Groups In The Skills A Performance Of The Passing And Scoring Skills In Football

No	Skills	Unit of Measurement	Contrast source	Sum of squares	Degree s of freedo m	Averag e of squares	Calculate d value of (F)
1	Short Pass	Degree	Between groups	94.476	2	47.238	1.991

No	Skills	Unit of Measurement	Contrast source	Sum of squares	Degree s of freedom	Average of squares	Calculated value of (F)
2	Medium Pass	Degree	Inside groups	925.143	39	23.722	1.807
			Total	1019.619	41		
			Between groups	73.000	2	36.500	
			Inside groups	787.786	39	20.200	
			Total	860.786	41		
			Between groups	161.762	2	80.881	
3	Close Scoring	Degree	Inside groups	1092.643	39	28.016	2.887
			Total	1254.405	41		
			Between groups	52.333	2	26.167	
			Inside groups	939.786	39	24.097	
			Total	992.119	41		
			Between groups	161.762	2	80.881	
4	Long-Distance Scoring	Degree	Inside groups	939.786	39	24.097	1.086
			Total	992.119	41		
			Between groups	52.333	2	26.167	
			Inside groups	939.786	39	24.097	
			Total	992.119	41		
			Between groups	161.762	2	80.881	

*Tabular value of (F) at an error ratio of $\leq (0.05)$ and in front of two degrees of freedom (2, 39) = 3.231

Table 3 shows that there are significant differences between the research groups in performing the selected skills, as the values of (F) calculated respectively are (1.991, 1.807, 2.887, 1.086) which is smaller than the tabular value of (F) at an error ratio $\leq (0.05)$, and in front of two degrees of freedom (2, 39) = (3.231), which indicates the equivalence of the three research groups in these variables.

Time Plan for Educational Programs: The educational programs included (36) educational units for the three proposed educational programs, distributed among the three experimental groups at the rate of (12) educational units for each experimental group. The implementation of the educational programs took six weeks, distributed by two educational units per week for each group, and the time of each educational unit was (45) minutes.

Statistical analysis

The researchers used the statistical program (SPSS), which included the following statistical means: (arithmetic mean, standard deviation, simple correlation coefficient (Pearson), test (T) for correlated samples, analysis of one-way variance Anova), as well as the use of the following methods:

1. Percentage
2. Coefficient of self-validity
3. Duncan test (Imam et al., 1990, 115-160).
4. L.S.R (Al-Rawi, Khalaf Allah, 1980, 73-77).

Results

A number of Visual Abilities for the Three Research Groups can be seen in the [table 4](#).

Table 4. Shows The Means And Standard Deviations Of The Pre- And Post-Tests And The Calculated (T) Values For A Number Of Visual Abilities For The Three Research Groups

No	Skills	Unit Of Measurement	Test Type	First Experimental Group			Second Experimental Group			Third Experimental Group		
				M.	St.D	Calculated T	M.	St.D	Calculated T	M.	St.D	Calculated T
1	Short Pass	Degree	Pre	55	5.588	*6.711	51.571	4.799	*16.420	52.142	4.111	*11.678
			Post	67	6.633		77.142	3.718		69.214	4.405	
2	Medium Pass	Degree	Pre	52.285	4.762	*11.885	54.928	4.632	*19.663	52	4.057	*10.522
			Post	70.571	7.802		77.642	2.977		65.928	3.668	
3	Close Scoring	Degree	Pre	47.357	6.663	*14.447	50.142	5.318	*17.043	52.142	3.370	*15.959
			Post	67.642	7.438		75.357	2.023		66.785	3.765	
4	Long-Distance Scoring	Degree	Pre	50.142	5.318	*11.646	52.785	4.822	*14.148	50.857	4.554	*14.546
			Post	66.285	6.366		73.214	4.209		67.642	4.550	

Significant difference at the error rate of $\leq (0.05)$ and in front of the degree of freedom (13) note that the tabular value of $(T) = 2.16$

Table 4 shows the following:

1. There are significant differences between the averages of the scores of the pre- and post-tests in the first experimental group in the skill and performance for the following skills: (short pass, medium pass, close scoring, and Long-distance scoring), as the values of (T) calculated respectively are (6.711, 11.885, 14.447, 11.646), which is greater than the tabular value of (T) at the error rate of $\leq (0.05)$ and in front of the degree of freedom (13) of (2.16) and in favor of the post-test.
2. The existence of significant differences between the averages of the scores of the pre- and post-tests in the second experimental group in skill and performance for the following skills: (short pass, medium pass, close scoring, and Long-distance scoring), as the values of (T) calculated respectively are (16.420, 19.663, 17.043, 14.148), which is greater than the value of tabular (T) at the error rate of $\leq (0.05)$, and in front of the degree of freedom (13) of (2.16) and in favor of the post-test.
3. The existence of significant differences between the averages of the scores of the pre- and post-tests in the third experimental group in the art of skill performance for the following skills: (short pass, medium pass, close scoring, and Long-distance scoring), as the values of (T) calculated respectively are (11.678, 10.522, 15.959, 14.546),

which is greater than the value of tabular (T) at the error rate of $\leq (0.05)$, and in front of the degree of freedom (13) of (2.16) and in favor of the post-test.

Presentation of the results of the differences in the post-test between the three research groups in the development of skill and performance for a number of basic skills in football:

To verify the comparisons between the effectiveness of proposed instruction programs using different geometric shapes and various colors in the skill and performance for a number of basic football skills, the researcher used the one-way analysis test of variance, (ANOVA WAY ONE), as shown in [Table 5](#).

Table 5. Shows The Results Of The Analysis Of The Difference Between The Three Research Groups In The Development Of The Skill And Performance For A Number Of Basic Football Skills In The Post-Test

Skills	Contrast source	Sum of squares	Degrees of freedom	Average of squares	Calculated value of (F)
Short Pass	Between groups	796.333	2	398.167	*15.466
	Inside groups	1004.071	39	25.745	
	Total	1800.405	41		
Medium Pass	Between groups	974.333	2	487.167	*17.567
	Inside groups	1081.571	39	27.733	
	Total	2055.905	41		
Close Scoring	Between groups	624	2	312	*12.718
	Inside groups	956.786	39	24.533	
	Total	1580.786	41		
Long-Distance Scoring	Between groups	377.476	2	188.738	*7.171
	Inside groups	1026.429	39	26.319	
	Total	1403.905	41		

Tabular value (F) at an error ratio of $\leq (0.05)$ and in front of two degrees of freedom (2-39) = 3,231

[Table 5](#) shows that the calculated values of (F) for all selected basic skills are greater than the tabular value of (F) at the error rate of $\leq (0.05)$ and in front of two degrees of freedom (2-39) of (3,231). For the purpose of testing the possible differences between the averages of the three experimental groups in the art of skill performance of the selected basic skills, to determine which group outperforms the other, the researcher used the (Duncan) test to find out these differences, as follows:

Presentation of the results of the development of the skill and performance for the skill of the short pass:

Table 6. Shows The Results Of The Duncan Test To Compare The Averages Of Skill And Performance For The Skill Of The Short Pass For The Three Experimental Groups

Groups			Third group	First group	Second group	Groups
	Groups	L.S.R	65,928	70,571	77,642	
Second group	77,642	4,235	*11,714	*7,071		
First group	70,571	4,024	*4,643			

* Significant at an error ratio $\leq (0.05)$

Table 6 shows a comparison between the three experimental groups' average scores on the short pass skill, the results showed the following:

1. The existence of a significant difference between the second and first groups and in favor of the second group, which used geometric shapes with cold colors, as the difference value was (10,142), which is greater than the value of (L.S.R) at the error rate of $\leq (0.05)$, which is (4,078).
2. There was a significant difference between the second and third groups and in favor of the second group, which used geometric shapes with cold colors, as the difference value was (7,928), which is greater than the value of (L.S.R) at the error rate of $\leq (0.05)$, which is (4,078).
3. The existence of a minor difference between the third and first groups, as the difference value was (2,214), which is smaller than the value of (L.S.R) at the error rate of $\leq (0.05)$, which is (3,875).

Presentation of the results of the development of the art of skill performance for the skill of the medium pass:

Table 7. Shows The Results Of The Duncan Test To Compare The Averages Of Skill And Performance For The Skill Of The Medium Pass For The Three Experimental Groups

Groups			First group	Third group	Second group	Groups
	Groups	L.S.R	67	69,214	77,142	
Second group	77,142	4,078	*10,142	*7,928		
Third group	69,214	3,875	2,214			

* Significant at error ratio $\leq (0.05)$

Table 7 shows a comparison between the average results of the medium pass skill and the three experimental groups, as the results showed the following:

1. The existence of a significant difference between the second and third groups and in favor of the second group, which used geometric shapes with cold colors, as the difference value was (11,714), which is greater than the value of (L.S.R) at the error rate of $\leq (0.05)$, which is (4,235).
2. There was a significant difference between the second and first groups and in favor of the second group, which used geometric shapes with cold colors, as the difference value was (7,071), which is greater than the value of (L.S.R) at the error rate of $\leq (0.05)$, which is (4,235).
3. There was a significant difference between the first and third groups and in favor of the first group, which used geometric shapes, as the value of the difference was (4,643), which is greater than the value of (L.S.R) at the error rate of $\leq (0.05)$, which is (4,024).

Presentation of the results of the development of the skill and performance for the skill of close scoring:

Table 8. Shows The Results Of The Duncan Test To Compare The Averages Of The Skill And Performance For The Close Scoring Skill And For The Three Experimental Groups

Groups			Third group	First group	Second group	Groups
	Groups	L.S.R	66,785	67,642	75,357	

Second group	75,357	3,982	*8,572	*7,715	
First group	67,642	3,783	0,857		

* Significant at error ratio of $\leq (0.05)$

Table 8 shows a comparison of the averages of the results of the close scoring skill and the three experimental groups, as the results showed the following:

1. The existence of a significant difference between the second and third groups and in favor of the second group, which used geometric shapes with cold colors, as the value of the difference was (8,572), which is greater than the value of (L.S.R) at the error rate of $\leq (0.05)$, which is (3,982).
2. The existence of a significant difference between the second and first groups and in favor of the second group, which used geometric shapes with cold colors, as the value of the difference was (7,715), which is greater than the value of (L.S.R) at the error rate of $\leq (0.05)$, which is (3,982).
3. There was a minor difference between the first and third groups, as the difference value was (0.857), which is smaller than the value of (L.S.R) at the error rate of $\leq (0.05)$, which is (3,783).

Presentation of the results of the development of the skill and performance for the skill of Long-distance scoring:

Table 9. Shows The Results Of The Duncan Test To Compare The Averages Of The Skill And Performance For The Long Scoring Skill And For The Three Experimental Groups

Groups			First group	Third group	Second group	Groups
	Groups	L.S.R	66,285	67,642	73,214	
Second group	73,214	4,126	*6,929	*5,572		
Third group	67,642	3,921	1,357			

* Significant at error ratio $\leq (0.05)$

Table 9 shows a comparison of the averages of the results of the long scoring skill and the three experimental groups, as the results showed the following:

1. There was a significant difference between the second and first group and in favor of the second group, which used geometric shapes with cold colors, as the difference value was (6,929), which is greater than the value of (L.S.R) at the error rate of \leq (0.05), which is (4,126).
2. There was a significant difference between the second and third group and in favor of the second group, which used geometric shapes with cold colors, as the difference value was (5,572), which is greater than the value of (L.S.R) at an error rate \leq (0.05), which is (4,126).
3. There was a minor difference between the third and first group, as the difference value was (1,357), which is smaller than the value of (L.S.R) at an error rate \leq (0.05), which is (3,921).

Discussion

Discussion of the results of the differences between the pre- and post-tests in the skill and performance for a number of basic skills in football; Through the results obtained in [table 4](#), it was found that there are significant differences between the results of the pre- and post-tests among the three experimental groups in the skill and performance for all skills selected in football, as the calculated values of (T) were greater than the value of tabular (T) at an error rate of \leq (0.05), and the degree of freedom (13) of (2.16). The researchers attribute the reason for these differences to the fact that the use of geometric shapes helped students in the implementation of skills with good and influential performance, where the diversity of exercises using geometric shapes contributed to expanding students' perceptions in order to better understand the skill, its clarity and ease of application. This is only done if the process is accompanied by various exercises, as ([Hastie and Buchanan 2000](#)) points out that "We contend these influences on the performance and learning of motor skills are similar across human learners, though perhaps amplified or dampened within individuals. Presumably not coincidentally, certain motivational factors, in particular those that underlie intrinsic motivation or which satisfy fundamental psychological needs" ([Zullig and White 2011](#)). The researchers add that the skill exercises that used geometric shapes with colors (cold or hot), helped students to realize the required motor duties, as well as being new and innovative educational means for students, which led to increased suspense and motivation to perform activities and motor duties, "Skilled movement is fundamental to surviving and thriving in the world and the basis as well for many of the highest human endeavors and cultural achievements, from sport to art to music." ([Urchaga et al. 2020](#)). This, in turn, reflected positively on the development of the skill and performance of the skills selected in football, as he adds ([Choi et al. 2021](#)) that "teaching aids work to achieve communication and transfer educational goals from the teacher to the learner, and they increase the effectiveness and improvement of the learning process, and motivate learners to participate in more educational situations and their excitement to participate in more learning and continue in it, and it also facilitates the process of remembering by recalling information" ([Thompson et al. 2014](#)). Also, the performance of these exercises helped the learners to improve their skill performance by obtaining immediate feedback, which the learner gets as a result of completing the required skill duty, this is pointed out in ([Taylor et al. 2010](#)) "The internal and external feedback works to indicate the wrong and correct performances during the subsequent or next motor performance, so the feedback stimuli the motor skills that work to refine and develop the motor performance of the novice player and direct responses towards the motor goal during situations successive education." ([Barker, Quennerstedt, and Annerstedt 2015](#)). The researchers also believe that there are other factors that contributed to the development of the skill and performance among the three groups, including (repetition, diversity in exercises and rest periods), as the repetitions and continuous practices of each

skill separately and the presence of geometric shapes, various colors and different educational tools had a major role in this development. Frequent repetition and practice helped them get used to the use of the precise part of the foot when performing skills and the presence of geometric shapes and colors helped that learner to correct errors (self-feedback), by knowing the result of performance, as (Bronikowski 2010) mentions Effective motor performance is important for surviving and thriving, and skilled movement is critical in many activities. (Bronikowski 2010)

Discussion of the results of the post-tests of the three research groups:

Through the results presented and analyzed in the tables (5, 6, 7, 8, 9) it shows the dominance of the second group, which used (geometric shapes with cold colors), on the first and third group in the skill performance of all the chosen skills, and the researchers attribute the reason for this to the fact that cold colors give a sense of the extensiveness to the geometric shape used in the exercise (larger space) for learners, as color is one of the most important methods that help us distinguish and understand what surrounds us. Color is an important characteristic, because its concepts are related to sensory perception of the surroundings, and visual, physiological and psychological effects (for each color) that reflect on the learner and his behavior, as cold colors are expressive of tranquility and serenity and they calm the nerves, as well as help to remove anxiety and provide self-confidence, which helped students to perform effectively and with high confidence.

Mentions that the color blue is the favorite color for more than half of the world's population (Gallé et al. 2015), Sari adds that "the color green lowers blood pressure, relaxes the nervous system and stimulates creativity" (Sari, Warni, and Arifin 2024), and colors are one of the most important phenomena that arouse human attention, colors may give a feeling of emptiness different from the actual feeling, the use of cold colors gives a sense of a wide space, and the use of hot colors or (warm) gives a feeling of smallness, tightness or emptiness, (Richard 2015).

States that "the choice of colors, attraction to them or aversion to them is due to a variety of reasons, physiological, psychological, social, symbolic, taste" (Morrot, Brochet, and Dubourdieu 2001), and this is confirmed by (Edwards 2004), "Colors have an impact on our souls in three main aspects: positive - negative - neutral". green is the color of spring, joy and comfort, and the blue color gives reassurance and calmness and keeps stress and anxiety away (Crespi 2020).

The researchers add that the use of exercises accompanied by geometric shapes with cold colors helped raise the level the students' concentration when performing the required motor skills, and this in turn led to the development of their visual abilities, concentration is one of the important means in raising the capabilities of learners and their abilities to observe things accurately and clearly (Zullig and White 2011), and the exercises that used geometric shapes with cold colors have a positive impact on getting students out of the repetitive routine of the lesson, which contributed to the banishment of boredom and dullness and increased the enthusiasm and motivation of students in the performance of motor skills required of them in the curriculum in the educational program, as motivation is one of the necessary factors in the learning process, "It is typically considered time to look afresh at dominant theories in a field when the accumulating evidence suggests that old frameworks cannot account for substantial new insights and data. We contend that such a circumstance exists with respect to the state of motor learning theory." (Krakauer et al. 2019). This explains the findings of the current study, which produced a preference for the second group, which used geometric shapes with cold colors over the first and third groups, color has an indirect effect (the physiological action of color) through the narrowing or expansion of the space, and also "by its spatial action in the inventory and liberation so that it approaches the direct form by the effective forces emitted

by color" (Gallé et al. 2015). The perception of emptiness by Man is a process that requires mental activity, which works to give the general meaning of the things surrounding the person, and this process (perception of emptiness) is not related to the sense of sight only, as it is the basic sense responsible for transmitting the signal to the brain through images through the eye, but the sense of emptiness comes through the interaction of all senses with that space, and what is reflected in the impression and psychological effects on the human being (Urchaga et al. 2020). "colors have the ability to cause psychological effects on humans, they have the ability to reveal our personality, as each color has associations with certain concepts and also has connotations of special suggestions" (Zullig and White 2011). Colors are considered the element of success if used effectively and correctly, "places with a comfortable and beautiful effect, where color is the driving element, color plays an important role in determining the impression and emotional touch inside the place" (Twomey et al. 2021), colors are naturally a way to give the external appearance to the shape, and it also gives the viewer a sense and effect of pleasure (Gallé et al. 2015).

Conclusion

The three educational programs have had a positive impact on the development of the skill and performance of the selected basic skills of football. The second experimental group, which used (geometric shapes with cold colors), surpassed the first and third groups in developing skill performance for all the basic skills under study. The researchers recommend that Emphasis on the use of cold-colored geometric shapes in the design of skill exercises used in the applied part of the lesson. Emphasis on the use of regular geometric shapes such as rectangle, square, circle and others.

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Conflict of interest:

Overall, the authors declare that there is no conflict of interest in this research.

References

- Barker, Dean, Mikael Quennerstedt, and Claes Annerstedt. 2015. "Learning through Group Work in Physical Education: A Symbolic Interactionist Approach." *Sport, Education and Society* 20 (5): 604–23. <https://doi.org/10.1080/13573322.2014.962493>.
- Bronikowski, Michał. 2010. *Physical Education Teaching and Learning*.
- Choi, Siu Ming, Raymond Sum, Fung Leung, Tristan Wallhead, Kevin Morgan, Daniel Milton, Sau Ha, and Hui Sit. 2021. "Effect of Sport Education on Students' Perceived Physical Literacy, Motivation, and Physical Activity Levels in University Required Physical Education: A Cluster-Randomized Trial." *Higher Education* 81 (June). <https://doi.org/10.1007/s10734-020-00603-5>.
- Crespi, Luciano. 2020. "Designing Interiors," 1–57. <https://doi.org/10.4018/978-1-7998-2823-5.ch001>.
- Edwards, Betty. 2004. *Color: A Course in Mastering the Art of Mixing Colors*. Penguin.
- Gallé, Francesca, Giuliana Valerio, Valeria Di Onofrio, Gennaro Mantile, Raimondo Bottiglieri, and Giorgio Liguori. 2015. "Physical Education in the Italian Higher Secondary School: A Pilot Study Based on Experiences and Opinions of Undergraduate Students." *Sport Sciences for Health* 11 (1): 109–16. <https://doi.org/10.1007/s11332-014-0216-7>.
- Gustian, Uray, Deddy Rahmat Saputra, Cece Rakhmat, Yusi Rika Yustiana, and Intan

- Primayanti. 2024. "Physical Education and Its Scope: A Literature Review of Empirical Studies with A Holistic Perspective Teaching Practices in Indonesia." *Indonesian Journal of Physical Education and Sport Science* 4 (2): 171–86. <https://doi.org/10.52188/ijpess.v4i2.729>.
- Hastie, P A, and A M Buchanan. 2000. "Teaching Responsibility through Sport Education: Prospects of a Coalition." *Research Quarterly for Exercise and Sport* 71 (1): 25–35. <https://doi.org/10.1080/02701367.2000.10608877>.
- Krakauer, John W., Alkis M. Hadjiosif, Jing Xu, Aaron L. Wong, and Adrian M. Haith. 2019. "Motor Learning." *Comprehensive Physiology* 9 (2): 613–63. <https://doi.org/10.1002/cphy.c170043>.
- Morrot, Gil, Frédéric Brochet, and Denis Dubourdieu. 2001. "The Color of Odors." *Brain and Language* 79 (2): 309–20. <https://doi.org/10.1006/brln.2001.2493>.
- Olesov, Nikolai P., Afanasiy A. Sergin, Vasiliy N. Alekseev, Nikita V. Nikiforov, and Innokentii I. Baishev. 2020. "Preparing Students of the Institute of Physical Education and Sport to Use Distant Learning Technologies in the Course of Pandemic." *Propósitos y Representaciones* 8 (SPE3). <https://doi.org/10.20511/pyr2020.v8nspe3.709>.
- Richard, Carlos Jermaine. 2015. "Intimate Partner Violence in the Black Church: Bridging the Gap between Awareness and Policy Development." <http://digitalcommons.georgefox.edu/dmin/110>.
- Said, Noureddine M. Ben, Lilia Inoubli, Younes N. Ben Said, Yulia V. Koryagina, Mohamed Mustapha Ammar, Oxana N. Akimkina, and Mokhtar Inoubli. 2024. "Effect of Different Doses of Creatine Supplementation on Power and Speed During the Preparation Period in Football Players." *Human Sport Medicine* 24 (2): 100–110. <https://doi.org/10.14529/hsm240213>.
- Sari, Wafiq Aulia, Herita Warni, and Syamsul Arifin. 2024. "The Role of Physical Education Sports and Health in Building Character" 4 (2): 204–11.
- Taylor, Ian M., Nikos Ntoumanis, Martyn Standage, and Christopher M. Spray. 2010. "Motivational Predictors of Physical Education Students' Effort, Exercise Intentions, and Leisure-Time Physical Activity: A Multilevel Linear Growth Analysis." *Journal of Sport and Exercise Psychology* 32 (1): 99–120. <https://doi.org/10.1123/jsep.32.1.99>.
- Thompson, Debbe, Dora Cantu, Riddhi Bhatt, Tom Baranowski, Wendy Rodgers, Russell Jago, Barbara Anderson, et al. 2014. "Texting to Increase Physical Activity among Teenagers (TXT Me!): Rationale, Design, and Methods Proposal." *JMIR Research Protocols* 3 (1). <https://doi.org/10.2196/resprot.3074>.
- Tuyls, Karl, Shayegan Omidshafiei, Paul Muller, Zhe Wang, Jerome Connor, Daniel Hennes, Ian Graham, et al. 2021. "Game Plan: What AI Can Do for Football, and What Football Can Do for AI." *Journal of Artificial Intelligence Research* 71: 41–88. <https://doi.org/10.1613/JAIR.1.12505>.
- Twomey, Colin R., Gareth Roberts, David H. Brainard, and Joshua B. Plotkin. 2021. "What We Talk about When We Talk about Colors." *Proceedings of the National Academy of Sciences of the United States of America* 118 (39). <https://doi.org/10.1073/pnas.2109237118>.
- Urchaga, José D., Raquel M. Guevara, Antonio S. Cabaco, and José E. Moral-García. 2020. "Life Satisfaction, Physical Activity and Quality of Life Associated with the Health of School-Age Adolescents." *Sustainability (Switzerland)* 12 (22): 1–13. <https://doi.org/10.3390/su12229486>.
- Zullig, Keith J, and Rebecca J White. 2011. "Physical Activity, Life Satisfaction, and Self-Rated Health of Middle School Students." *Applied Research in Quality of Life* 6 (3): 277–89. <https://doi.org/10.1007/s11482-010-9129-z>.

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