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The effect of the cube strategy on analytical thinking and learning the skills of handling and rolling football for students

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ABSTRACT

The importance of the research is evident in the fact that it is a scientific attempt to use a modern strategy (cube strategy), which the researcher believesthat it has a positive impact on the analytical thinking of students, which will be reflected positively in learning some basic football skills for students, including handling and rolling skills and saving time and effort expended To feed the two skills.

The research aimed to identify the impact of the cube strategy on analytical thinking and learning the skills of handling and rolling football for students, and the research sample was selected represented by students of the fifth preparatory grade in Al-Kindi Preparatory School for Boys - Dhi Qar Governorate for the academic year 2024-2025 AD, and the researchers used the experimental approach by designing the two equivalent experimental and control groups.

The most important conclusions were the superiority of the experimental group, which applied the cube strategy to the control group, which applied the method used in learning the skills of handling and rolling football for students.

1- Definition of research

1-1 Introduction and importance of research:

The tremendous scientific progress witnessed by the world during the first years of the twenty-first century gave all fields of science and various knowledge a lot of development, and the sports field is one of these areas that include science and diverse knowledge, and teaching methods are one of these sciences that have received a large share of development by harnessing various knowledge and other sciences, strategies and modern methods to bring about change for the better in society, and this development was caused by The accumulation of experiences, research and studies carried out by many scientists and researchers in the field of teaching methods and motor learning to provide this science with the best ways, which focused in its entirety on developing the performance of the learner's motor skills and to serve the kinetic path of the sports event.

Modern strategies have emerged in learning, including the cube strategy as one of the modern strategies through which we try to increase the ability of learners to think analytically, which in turn helps the learner and improves his ability to learn and absorb and measure their readiness to learn and benefit from their previous knowledge and experience and the cube strategy is one of the modern teaching strategies that depend on the cognitive organization of the content as it is a visual method that helps students organize scientific information by looking at this scientific phenomenon And its own topics of the six aspects, which represent the faces of the cube, represented in the description and comparison, linkage, analysis, application, and proof, any explanation of the subject in the form of various aspects as the teacher outlines under the title of each face of the cube, and the students put their ideas below each of the six faces of the cube These six faces develop and expand the analytical thinking of students and benefit from it in the acquisition of good learning and economic skill **.**

The effectiveness of football is one of the events that consist of several basic skills, which the teacher is required to teach and deliver to learners and develop them well in order to raise their skill performance, and this is through the use of appropriate and appropriate strategies and methods that are consistent or consistent with the nature and tendencies of learners and their desires and reach them to a level of mastery and high rank of efficiency and effectiveness to reach the goals to be achieved, and since the process of upgrading these skills and then the game And access to its performance to the best level is what the teacher seeks, this requires finding educational alternatives that suit the multiple skills of football and suit the age stages of learners, hence the importance of research is evident in being a scientific attempt to use a modern strategy (cube strategy), which the researchers believe that has a positive impact on the thinking of the learner, which is an important factor, especially in learning basic skills in football andthe progress of the level of learning faster in learning some basic skills reel Foot for students, especially handling and rolling skills.

1.2 Research problem

Through the work of the researchers and watching most of the physical education lessons in some schools of the province, they noticeda weakness among students in the basic skills of football, and they also noticed that the classroom environment in most schools is an environment that is not encouraging and not thought-provoking, and also noted that the basic skills of football , especially the skills of handling and rolling. It develops, but not in a way that is commensurate with the rapid development of the game, and this may be due to the lack of use of strategies commensurate with the large number of learners, which increases the burden of the educational process on the teacher in terms of following up each student and correcting the errors that accompany the skill performance that he performs , so teachers' reliance on learning strategies and methods that depend on the teacher and make the role of the learner a negative future for information, and the absence of vital interaction between the learner and the teacher may be one of the reasons that led To the low level of learning for most learners, it has become necessary to search for strategies and teaching methods based on scientific foundations to reach the desired goals of the educational and teaching process, and lead to activating the role of the learner and his positive self-effort in confronting and addressing the problems that may face him, and thus lead to raising the skill level of football for students, which prompted the researchers to use the cube strategy, and know its impact on Analytical thinking and learning the skills of handling and rolling football for students, in the hope of making a positive change , andthe desire of the researchers to provide a modest scientific addition to the lack of research that dealt with these topics.

1-3 Research Objectives :

1- Building a scale of analytical thinking in football for students.

2- Preparing educational units with the strategy of the question cube in analytical thinking and learning some basic football skills for students.

3- Identify the impact of the cube strategy on analytical thinking and learn the skills of handling and rolling football for students.

4- Identifying the preference of the control and experimental groups in the results of the post-tests in learning the skills of handling and rolling football for students.

1-4 hypothetical research:

1- The cube strategy and method used have a positive impact on analytical thinking and learning the skills of handling and rolling football for students.

2- The experimental group, which implemented the cube strategy, has an advantage in the post-tests in learning the skills of handling and rolling football for students .

1-5 Research Areas:

1-5-1 Human field: students of the fifth grade of preparatory school in Al-Kindi Preparatory School for Boys - Nasiriyah district, Dhi Qar Governorate, for the academic year 2024-2025.

1-5-2 Time Range: For the period from 1/11/2024 to 8/1/2025 .

1-5-3 Spatial area: playground in Al-Kindi Preparatory School for Boys.

1.6 Definition of terms

1.6.1 Cube strategy:

- It is a strategy or visual method that helps the learner to organize the scientific information of a single scientific phenomenon by looking at the scientific phenomenon from its six aspects, i.e. the faces of the cube (496:3).

1.6.2 Analytical thinking: "It is the ability of the individual to analyze the details of the situation into accurate or detailed parts to find the appropriate solution to the problem, and deals with the ability to analyze environmental stimuli into separate parts to facilitate dealing with them and thinking about them independently.

2- Research methodology and field procedures

2-1 Research Methodology:

The researchers used the experimental approach by designing the two equivalent groups (control and experimental) to suit the nature of this study and its objectives.

2.2 Research community and sample:

The research community was determined by the fifth grade preparatory students in Al-Kindi Preparatory School for Boys - Dhi Qar Governorate for the academic year 2024-2025 AD, and their number is (98) students distributed over (3) divisions are (a, b, c), and after conducting homogeneity and equivalence, the researchers conducted their field experiment on a sample consisting of (32) students representing the two divisions (A, B) and by (16) students from each division, and the percentage of the sample of the original community is equal to (32.65%), and in a random way in the manner of lottery was chosen Division (A) as an experimental group to implement the strategy of the cube, and Division (B) control group implements the method used by the teacher of the material, the Division (C) has been conducted by the researchers exploratory experiment, The researchers excluded a number of members of the sample, namely students who failed and people with pathological disabilities and students practicing the game of football, the researchers conducted homogeneity and equivalence of the research sample using the coefficient of variation and test (t) for independent samples, and tables (1, 2) show that.

Tables 1 and 2 show this.

Table (1)

Shows arithmetic means, standard deviations and coefficient of variation in terms of (age , height , mass)

Coefficient of variation	Standard deviation	Arithmetic mean	Unit of measurement	Processors / Variables

(x) %	(p)∓	(o)		
2.058	3.913	190.082	month	lifetime
3.113	5.442	174.791	poison	Length
7.887	5.227	66.273	kg	Mass

*** All values of the coefficient of variation were less than 30%, which indicates the homogeneity of the sample in the above variables**

Table (2)
Shows the equivalence of the two research groups in handling and scoring skills in football

Statistical significance	Significance level	T* value Calculated	Experimental Group		Control group		Processors Variables	
			(p)∓	(o)	(p)∓	(o)		
Immoral	0.783	0.278	2.466	11.416	1.898	11.166	degree	Handling
Immoral	0.722	0.361	2.249	10.166	3.306	9.750	degree	Rolling

*** Significant at the level of significance of < (0.05) and in front of the degree of freedom (30)**

It is clear through Table (2) that the value of (t) calculated for all research variables with a level of significance greater than (0.05), which indicates the existence of non-significant differences, and this means that the two groups are equivalent in the research variables.

2.3 Means of collecting information:

2.3.1 Means of data collection:

Arab and foreign sources - the Internet - tests and measurement, questionnaire.

2.3.2 Tools and devices used:

Laptop type (DELL) - tape measure - medical scale - whistle - electronic stop watch - football - colored tape - signs.

2-4 Identify some basic football skills and determine the test for each skill under study:

The basic football skills of the subject of the study were determined according to the vocabulary of the curriculum prescribed by the Directorate of School Sports Activity for Dhi Qar Governorate for the academic year 2024-2025 AD, and the basic skills are (handling and rolling), then the research required conducting tests for each skill under study, which was selected by taking advantage of the literature of previous studies and was presented to a number of experienced and specialized people and obtained their approval by 100%, and this is what achieves the virtual honesty of the tests, and on Despite the use of tests in the Arab and Iraqi environment and that their scientific transactions are verified and reliable, the researchers conducted an exploratory experiment on a sample other than the research sample and from the community of origin, and they are (12) students from Division (A) to verify the stability of the tests through the application of tests and re-application, as well as to ensure their objectivity by setting two arbitrators to

record the scores of the tests and then find the correlation coefficient between them, and the correlation coefficients were high, which achieves stability and objectivity, Table 3 shows this.

Table (3) shows the coefficients of stability and objectivity

Objectivity	constancy	Test Name	t
97.0	**0.87**	Handling accuracy test towards three circles drawn on the ground for a distance of (20) m	**1**
0.95	**0.82**	**The rolling test shows a change of direction**	**2**

*** Moral at the level of significance of < (0.05) and in front of the degree of freedom (10).**

2-5 Specifications of tests :

2.5.1 Handling skill test:

- **Test name:** Accuracy of handling test about three circles drawn on the ground for a distance of (20) m **(213:2).**
- **Purpose of the test: Measurement** of average handling accuracy.
- **Necessary tools :** specific area to conduct the test , (5) balls, tape measure, burke.
- **Procedures :** draw three overlapping circles, diameters respectively (2 m, 4 m, 6 m) and given degrees respectively (6, 4, 2) degrees where the center of the circles is the point of distance between the starting line and the three circles, which are at a distance of (20) m.
- **Registration: -** The player is given (5) consecutive attempts .
  - Calculates the number of scores obtained by the player from the five attempts
  - The highest score obtained by the player is (30) degrees.
- **General Guidelines:** - The attempt is considered a failure if the ball falls outside the circles.
- In the event that the ball falls on the circle line, the following degree is given according to the sequence of circles (5, 3, 1) degrees.

2.5.2 Rolling skill test:

- **Test name:** Rolling the ball between (5) signs of the distance between one pole and another (1.5) m back and forth.
- **Test objective:** Measuring the ability to roll by changing direction .
- **Tools used:** legal football, tape measure, five signs **,** stopwatch **,** whistle .
- **How to perform:** The tester stands with the ball on the starting line, which is a distance of (2 m) from the first sign, after hearing the whistle, he rolls the ball between the five signs back and forth, as the distance between one pole and another (1.5 m) and then back to the starting line, as in Figure (3).
- **Scoring**: The timer calculates the time from the moment the whistle is heard and stops it at the last moment the player returns to the starting line.

- The player is given two attempts calculated as the best .

2.6 Field research procedures:

2.6.1 Pre-tests:

The pre-tests were conducted on the main research sample on Wednesday, 10/11/2024 AD and at the Republic Preparatory Stadium for Boys, in the presence of the subject teacher and the assistant work team.

2.6.2 The main experience:

After the researchers identified all the requirements of the main experiment by identifying skill tests, and after conducting the exploratory experiment and benefiting from it in organizing work and preparing for the main experiment, the researchers gave an introductory educational unit to the two research groups whose purpose is to give prior education to the student to identify the nature of the skill to be learned as well as to achieve the goals that ask the researchers to build educational situations that will Students go through it during the implementation of the researched strategy, and based on this:

- The main experiment started on Wednesday, 17/12/2024 AD and ended on Monday, 22/12/2024 AD.
- The number of educational units during the educational curriculum (10) educational units , by two educational units per week

The time of the educational unit is (45) minutes , and the educational unit of the experimental group included the following:

1- Preparatory section: - and its time is (10) minutes, which includes the introduction, physical exercises and special warm-up of the muscle groups involved in performance.

2- The main section: - and its time (30) minutes aims to learn one of the basic skills in football and give exercises to learn it and consists of two parts: -

A - the educational aspect: - and its time (10) minutes and includes an explanation of the skill with its presentation to students by the subject teacher, as well as the application of the steps of the cube strategy after dividing students into four cooperative groups, and the cube rotates in front of the four groups to apply four steps of the strategy, namely (description, analysis, comparison and correlation).

- Dividing students into (4) opposing cooperative groups, and each group includes at least (4) students.
- An equilateral wooden cube, fixed on a rounded iron base, is placed in the middle in front of the four groups.
- The teacher rotates the cube manually horizontally until it stops rotating, so that each face of the cube corresponds to a certain group of students, who take the card that contains the question allocated to the face of the cube who met them and these questions include steps (description - analysis - comparison - link).
- Students read the questions and are given enough time to answer the questions after consultation and discussion of the members of the group of the question in a cooperative manner, and students in the rest of the groups listen to the answer, then

the teacher asks the rest of the groups about the correctness of the answer of the group answering the question, and the discussion is between the groups, then the teacher gives the best answer or closest to the correct, correcting errors and providing feedback, and so the same procedure is repeated with the rest of the groups.

B - the applied side: - and its time (20) minutes, which contains the fifth side of the cube, the fifth step of the cube strategy (application), which is the application of a number of qualitative exercises prepared to learn the skill of the educational unit, and each group of groups together applies exercises in a cooperative manner.

3- The final section: - and its time is (5) minutes and includes answering the question related to the sixth side of the cube, i.e. the sixth step of the cube strategy (proof), through which students give their point of view on the usefulness of learning the skill under study, then give relaxation and calming exercises or a small game.

2.6.3 Post-tests :

The post-tests were conducted on Tuesday , 23/12/2024 AD, and the researchers were keen that the conditions be similar to the tribal tests in terms of place, time, and the presence of the assistant work team and under the direct supervision of the researcher, and the same steps were used in the pre-test .

2.7 Statistical Methods :

The researchers used the statistical program (SPSS) to extract the statistical results according to the following statistical laws: arithmetic mean - standard deviation - coefficient of variation - (t) for associated samples - (t) for independent samples.

3. Presentation, analysis and discussion of results

3-1 Presentation and analysis of the results of the experimental andcontrol groups:

Table (4)

Shows the arithmetic means, standard deviations, and t-calculated value of the pre- and post-tests of the two groups

kind Significance	Significance level	Value(t) Calculated	Post-tests		Pre-tests		Processors Variables	The Collection
			(±p)	Going to	(±p)	Going to		
Moral	0.000	11.171	2.678	22.416	2.466	11.416	Handling (degree)	Experimental
Moral	0.000	11.899	2.632	18.250	2.249	10.166	Rolling (degree)	
Moral	0.000	7.567	2.810	17.583	1.898	11.166	Handling (degree)	Adjuster
Moral	0.000	6.959	3.528	14.583	3.306	9.750	Rolling (degree)	

*** Moral at the level of significance ≤ (0.05) and in front of the degree of freedom (19).**

Table (4) shows the arithmetic means, standard deviations and the value of (t) calculated between the results of the pre- and post-tests in the handling and rolling skills of football for students for the experimental andcontrol groups, as the results presented in the table showed that the value of the significance level calculated in the tests for the two groupsLess than the value of the significance level (0.05), which indicates that there are statistically significant differences between the pre- and post-tests and in favor of the post-tests of the two groups.

3-2 Presentation and analysis of the results of the post-tests of the experimental and control groups:

Table (5)

Shows the arithmetic means, standard deviations and value of (t) calculated for the post-tests of the control and experimental groups

Statistical significance	Significance level	Calculated t* value	Control group		Experimental Group		Processors Skills
			(p)∓	Going to	(p)∓	Going to	
Moral	0.000	4.312	2.810	17.583	2.678	22.416	Handling (degree)
Moral	0.009	2.889	3.528	14.583	2.632	18.250	Rolling (degree)

*** Moral at the level of significance of < (0.05) and in front of the degree of freedom (30).**

Table (5) shows the arithmetic means, standard deviations and the value of (t) calculated between the results of the post-tests in the skills of handling and rolling football for students and for the experimental and control groups, as the results presented in the table showed that the value of the level of significance calculated in the skill tests is less than the value of the significance level (0.05), which indicates that there are statistically significant differences between the post-tests of the two groups and in favor of the experimental group.

3.3 Discussion of the results:

Table (4) shows the evolution of the experimental and control groups in learning the skills of handling and rolling football for students to The researchers attribute this development and differences among the students of the two groups to several factors and reasons, including

Repetitive attempts that suit the students and the level of their abilities, as learning occurs through repetition and feedback , and the time period when applying the educational curriculum, which showed this development of the two groups, which is a natural phenomenon with the presence of divergent differences between the two groups and according to their impact in the method used, as the integrity of the educational curriculum and containing exercises selected scientifically and with

correct and consistent repetitions and consistent with the level and ability of the sample members and based on the correct practice, training and practice on A certain skill within a motor duty leads to an increase in experience and a development in skill performance, so practice is the most important variable in the learning process for complex and even simple skills.

The learning, progress and development of any skill is achieved through practice and repetition, and to avoid errors and this is done through the practical performance of learners under the supervision of the teacher, which is one of the main steps followed in teaching motor skills, as each skill when learning becomes a motor program stored in the brain and whenever repeated performance trimmed gradually until it reaches the acceptable performance, taking into account feedback to match the motor program stored in the brain with the movement performed and this is confirmed by (1992 Schmidt) that "for every skill we learn there is a motor program has a stock in the brain and the more we use this skill the more motor program stock accuracy and the learner reaches the stage of the mechanism in performance after storing the motor program in the long-term memory " (291:7).

As shown in Table (5) the superiority of the experimental group over the control group in the skills of handling and rolling football for students and the researchers attribute the reason for this superiority is due to the effectiveness of the cube strategy and its impact on thinking for the learner, which was applied by the experimental group as the educational units that were prepared according to this strategy have increased students' self-confidence and worked to get some of them out of isolation and fear of participation and increase their motivation through the cooperative work provided by the cube strategy through the facets. The six and the questions they carry regarding the educational material and motivate them to participate and love the curriculum and the desire to participate and rush towards the correct performance of learning where the goals are clear to the learner and this is what he pointed out (Fouad Suleiman) that "the clarity of goals and identified in behavioral forms or certain levels of performance they are meaningful and effective" (177:4).

One of the factors for the success of this strategy is cooperative work, distributing tasks among learners, controlling their attention, employing learning aids and media, to enrich learning support efforts, and supporting them morally gradually according to their abilities and learning needs and circumstances towards gaining self-confidence from the six aspects included in the strategy in the sense that may have dealt with the subject in all respects and be clear and easy to understand for the learner , and a sense of their responsibility towards their learning (29:4).

The use of the cube strategy worked to provide an educational atmosphere characterized by excitement and positive interaction and increase motivation towards learning among students towards achieving the best, as teaching using the cube strategy leads to more continuous and effective communication between the student and the teacher on the one hand and between the student and his peers on the other hand, which reflects positively on skill performance, Through

communication and interaction, the teacher can identify the needs of students of all kinds and reach appropriate solutions to reach the desired goal, through enemies of an opportunity for everyone to participate in the answer and listen to the answer of others, where their work is cooperative and effective, and this provides psychological stability for the learner and in turn reflects positively on the level of understanding and awareness they have.

4. Conclusions and recommendations

4.1 Conclusions:

1- The strategy of the cube and the method used has a positive impact on learning the skills of handling and rolling football for students.

2- The superiority of the experimental group, which applied the cube strategy on the control group, which applied the method used in learning the skills of handling and rolling football for students.

3- Learning according to the cube strategy has an impact on the thinking of the learner and worked to attract the attention of students, and increased their motivation and turnout towards learning.

4.2 Recommendations:

1- The need to use the cube strategy in learning the skills of handling and rolling football for students.

2- The need to take into account the individual differences between learners to choose the most appropriate strategies and models of education to reach the desired purpose of raising the level of learning, improving skill performance and increasing the effectiveness of the educational process.

4- The need to emphasize the conduct of similar studies using the cube strategy and on other team or individual games .

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